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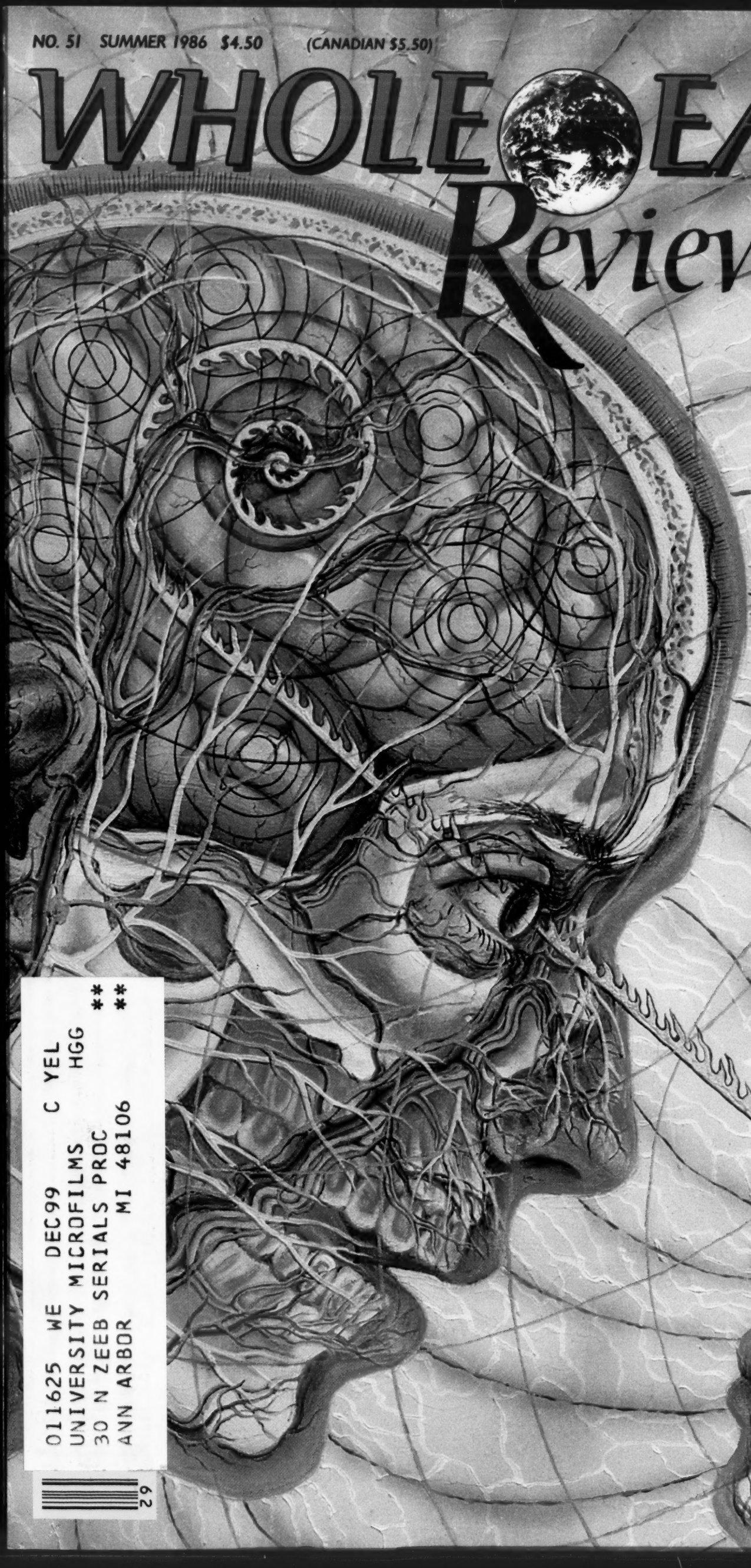
ACCESS TO TOOLS AND IDEAS

WHOLE EARTH Review



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Dehiscence

by Sallie Tisdale

illustration by
B. S. Beaver

"One factor determines all else about our relationship with our children: it is irreversible. The contract cannot be broken. . . . We are entangled," wrote Sallie Tisdale several years ago in an article for us called "Handfast — The Trick of Children" (CQ #40, p. 1). The trick of parents, Sallie said, is that they turn into children again. "When I grow up," her son tells her, "you'll be my baby." The lasting trick of parent and child swapping handholds takes place on the fly, and so we miss the subtle shift in weight that leads to the final gaping leap. —Kevin Kelly

dehiscence (de-his'ens) [L. dehiscere, to gape]
A bursting open, as of . . . a wound . . .

HE'S TALL NOW, AND lean: when he comes running toward me, breathless from some grand injustice or new idea, I see his ribs pressing against the skin, light and shadow. He takes deep, thoughtless breaths, and his lungs fill, elastic and proud. He seems free of blemish, taut and promising. He looks like my brother, a diagonal inheritance; in the grainy, black-and-white photographs of our childhood, my brother's face is round and fair and moon-shaped, his eyes small slits in that nineteen-fifties abundance. My son has that face, stripped of excess; he wears his sculpted muscles negligently, calmly, deserving. He has only what he needs, and uses it with not a whit of gratitude. He is seven and a half years old.

What I am most struck by is his sufficiency. He is his own, and singular. What binds us has grown less visible, the tension in the knot relaxes. We have been bifurcated, he and I — cloven. I can wonder now what it is like to be him — wonder, and know I'll never know. What is his experience? What have I created, only to lose? What does he think in a privacy I can hardly bear, a privacy that seems entirely unfair? It seems a series of tiny, intimate forfeitures, day after day; he absents himself delicately from my life. He takes in and makes new, he turns in his hand so that it catches the light, a life I can't live. I would not have thought it possible that I could be so halved (but I knew all along this was coming: there is relief in it, too). He dreams; I watch his face turned soft with sleep, the smile that skips across his face as he turns smug and safe, and I can see that he's dreaming. He dreams without me now; we dream different dreams.

How does he know the exact inflection, the emphasis? The same cries of disgust and hopeless pity for a mother's ignorance come full-voiced from every child — cold shock to hear it from mine. Twenty years ago I died a thousand deaths for my mother's dress and behavior and twittering concerns. Somehow he finds the same tone of injured dignity, of outrage. I am, he tells me, so *old.* I may not kiss him "in public" anymore. His head is as high as my breast when we walk. He holds the car door for me, calls me "ma'am," giggles with the silliness of it all. He has great white teeth, dark circles below his eyes, a scratch on his cheek, dirt in the lines of his neck. He wants his hair cut "like Elvis Presley," he wants it cut "like Michael Jackson," he wants a Mohawk. He sings commercial jingles for hamburgers and jeans and toothpaste while he builds elaborate constructions, strews his room with Viewmasters and "action figures" ("They're not *dolls,* Mom," he says in irritation) and books and dirty socks and sheets. He is, above all, busy; I am tired. I am, he tells me, "more beautiful than the women in *Playboy,*" then he's out the door. All through first grade he stayed beguiled by the same girl, who teased him (I watched from the corner) with a disturbing coquettish skill.

He comes into his own and it is my turn to be out-of-date, to be shocked, to drone on long after he ceases to hear me. He comes into his own with speed and power, calculating relationships, his own fragile self-esteem. The neighbor boys tease him and he runs home in a paroxysm of despair: "No one likes me," he sobs, and lends to his crying a thorough attention. What bravery all children possess. They line up to enter a new grade in school, their faces tremble with the effort of courage such a thing demands. Eyes peek back, to mother, to father, to a bygone fusion. The momentum takes hold, their lives demand to be led. I lead my son to the dentist and he climbs shakily into the great chair. He looks at me and asks for me to spare him, and I won't: seeing my refusal he turns away. He wants me to keep him a baby, he doesn't know I would if I could. He leaves me because he is leaving me. Already *I* am separate from him. He looks at me and sees — only me.

Once a week after school is gymnastics class. For the coach, he does things he won't do for me. He is willing, awestruck. I watch him drop to the mat to "do 25," valiant and straining, little elbows agog with the effort. He comes to the exhibition in red sweat pants and a shiny white tank top, confident that everyone watches him as he steps forward with a salute. At the end of the routine he sneaks a glimpse into the bleachers, seeking my eye; his solemn face breaks into a little grin, he waves a tiny, secret wave.

He isn't always eager for the forward motion. Sometimes he flings his arms around my thighs, moaning with love, and it really does seem to fill him too full. I sympathize. He talks in a baby voice, whining for cereal, the organism protesting its future. He's too lanky, too long, for my lap, his elbows get in the way of the book, his head blocks my sight. He longs for the mysterious pleasures of adulthood: solitude, mobility, explanations. But the price is a heavy one, his brow furrows when he calculates the cost.

When he sleeps I can believe in perfection, the possibility that *I* have done something perfect. I check to be sure he breathes, twisted in the covers, exhaling a metabolic heat, ripening. He will always live with me, he says, or perhaps he'll live next door. I don't have to fear failing him anymore; I already have. This is the relief: what's done is done. The balance is shifting now and his mistakes begin to take precedence over mine. I am inattentive, I want to read my book or be alone when he craves my attention. I know he won't live next door, not this one, and I'm glad. He is a whippet, frail and hot, bound for too-big dreams and burned fingers. I can't remember life without him — I can't remember *myself* without him, but the time will come. Sometimes, I put my book aside and wander to his room to watch him play. I find him reading a book, curled in a corner. "Would you mind leaving, Mom?" he says, hardly glancing up. "I feel like being alone." ■

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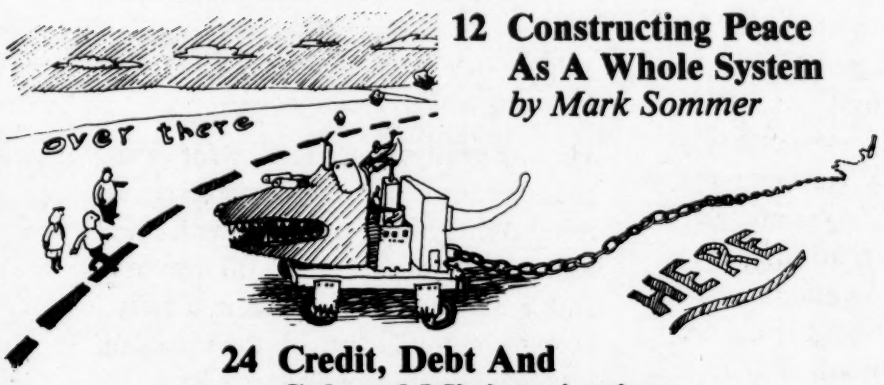

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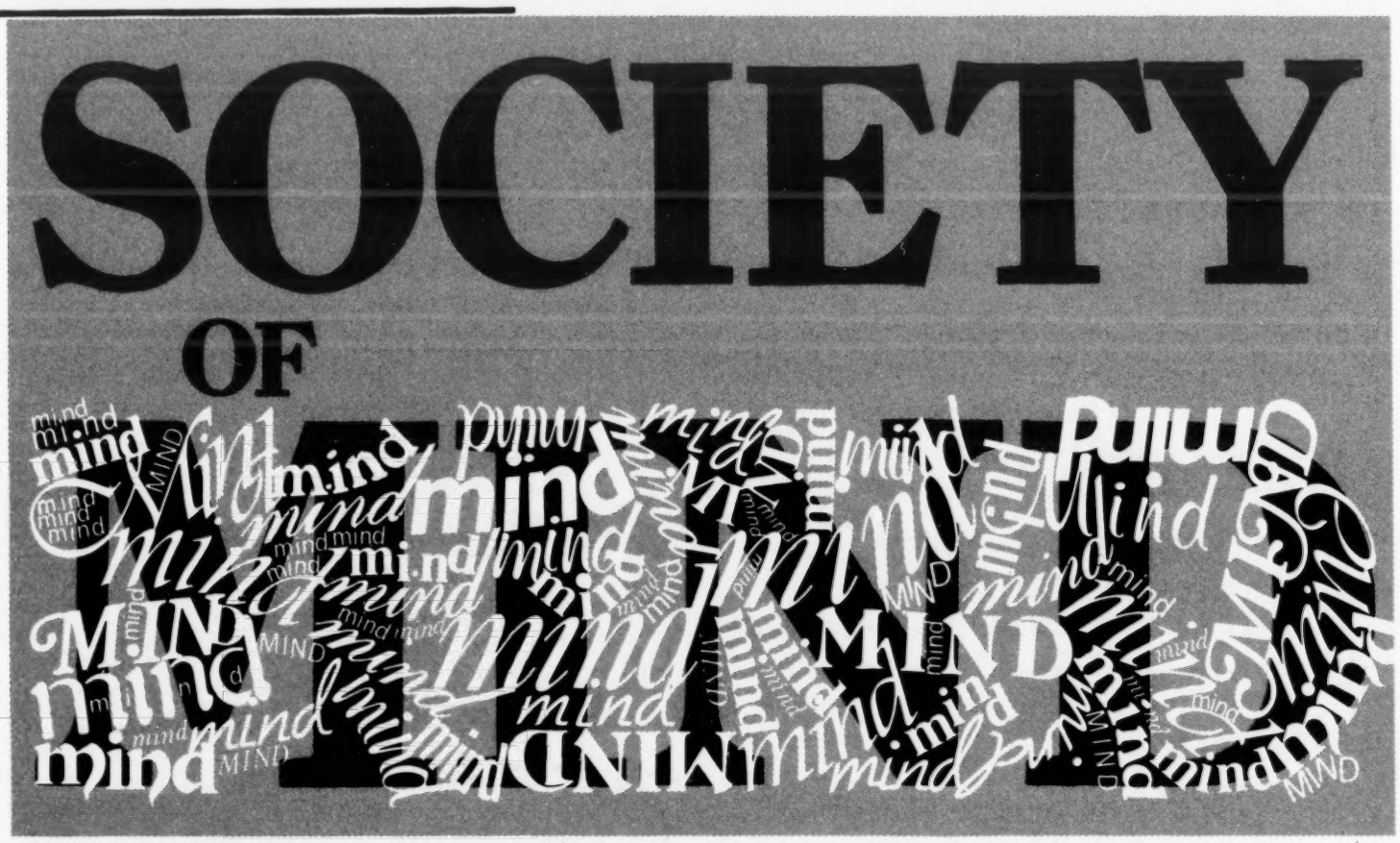


by Marvin Minsky *illustrated by Julie Minsky*

THIS TEXT tries to explain how minds work. How can intelligence emerge from non-intelligence? To answer that, I'll show that you can build a mind from many little parts, each mindless by itself.

I call this scheme "Society of Mind," in which each mind is made of many smaller processes. These we'll call *agents.* Each agent by itself can only do some simple thing that needs no mind or thought at all. Yet when we join these agents in societies — in certain very special ways — this leads to true intelligence.

There's nothing very technical in this text. It, too, is a society — of many small ideas. Each, by itself, is only common sense, yet when we join enough of *them,* we can explain the strangest mysteries of mind.

One trouble is that these ideas have lots of cross-connections. My explanations rarely go in neat, straight lines from start to end. I wish I could have lined them up so you could climb straight to the top, by mental stair-steps, one by one. Instead they're tied in tangled webs.

Perhaps the fault is actually mine for failing to find a tidy base of neatly ordered principles. But I'm inclined to lay the blame upon the nature of the mind: much of its power seems to stem from just the messy ways its agents cross-connect. If so, that complication can't be helped; it's only what we must expect from evolution's countless tricks.

Common sense is not a simple thing. Instead, it is an immense society of many painfully-acquired practical ideas.

If common sense is so diverse and intricate, what makes it seem so obvious and natural? This illusion of simplicity comes from losing touch with what happened during our infancy, when we formed our first abilities. As each new group of skills matures to work efficiently, we build yet more on top of them, not knowing much of how the old ones work. As time goes on, the layers underneath become increasingly remote till, when we try to speak of them in later life, we find ourselves with little more than synonyms for "I don't know."

One ought to ask, if thinking is so complicated, then how could it all seem so simple? Is it really possible that our minds use such intricate machinery and yet are unaware of it? It scarcely could be otherwise.

Nothing that I've been taught in the last year has stuck in my mind as tenaciously as these insights into how things stick in minds. I innocently charged through a manuscript from the society of Marvin Minsky's mind and came out plastered with burrs — little "aha!"s that wiggled deep and changed my stride. For the past ten years, Minsky has been the most seminal thinker in artificial intelligence at MIT. His research into the metastructure of thinking has been distilled into a several-hundred-page book from which these excerpts were chosen.

This essay is excerpted from the book, Society of Mind, *which will be published this summer by Simon & Schuster. Used with permission of the publisher.*

—Kevin Kelly

In general, we're least aware of what our minds do best.

It's mainly when our other systems start to fail that we engage the special systems we call "consciousness." Because of this, we cannot trust our offhand judgments about which of the things we do are simple and which of them require complicated machinery. Each portion of the mind can only sense how quietly the other portions do their jobs.

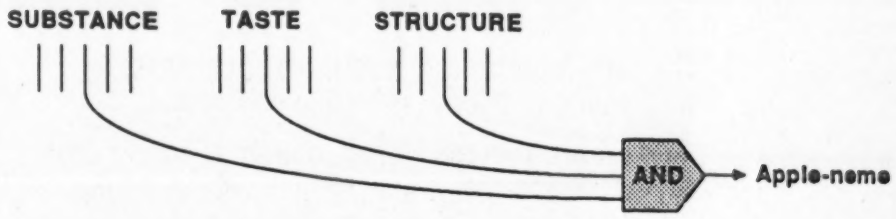
The Investment Principle: Our oldest ideas have unfair advantages over those which come later. The earlier we learn a skill, the more methods we can acquire for using it. Each new idea must then compete, all unprepared, against the mass of skills the old ideas have accumulated.

This is why it's almost always easier to do new things in older ways, instead of starting fresh. Each new idea, however good in principle, seems alien and awkward till we master it. The old ideas keep gaining strength; the new ones rarely can catch up. And then those older, well-developed skills will tend to spread to other worlds of thought in which they do not really work so well — but are just good enough to keep better, new ones from forming at all. In the short run, it is usually easier and better to use bad, old ideas than to start afresh.

Isn't it amazing that a mind can grow, yet keep on working while it's making changes in itself? How do we do it? A mind can't simply shut down work and say it's "closed for renovations." How can we stay alive and well while vital parts are being modified? One way human institutions cope with change is by assigning managers to be responsible for getting important jobs done. And we expect those managers to maintain flexibility by keeping open good alternatives by making several workers interchangeable. Then, while one is being changed or trained, another can be made to do its work. If this is done at every stage, then we can even change the managers. This is one reason we build pyramids of power and authority, both outside and in the mind.

It is an old idea that brains are made of opposing hierarchies. The ascending system must compress large amounts of low-level information into simpler, more meaningful representations, so that those million-featured pictures on our retinas can lead to nemes [thought units] for apples and chairs. The descending system must convert terse instructions from higher levels into multitudes of more specific signals for smaller agents, as when your wish to walk across a room must cause a hundred muscles to pull in a hundred different ways.

People often ask, "Could a machine ever be conscious?" I'm often tempted to ask back, "Could a person ever be conscious?" I mean this as a serious reply, because we seem so ill-equipped to



Consider two different situations. In the first case, I hold up an apple and ask, *"What is this?"* In the second case there is no apple on the scene and I ask instead, *"What do we call those round, red, thin-peeled fruits?"* Both times you end up with an apple-thought. We have agents that recognize a certain kind of state of mind or — if we dare to use the phrase — a certain combination of ideas. *In this sense, both physical and mental objects could engage similar representations and processes.*

understand ourselves. That in itself is understandable: most of our evolution came long before our brains became intelligent enough to start to know themselves. They still don't seem to have good ways to reach the records of their own activities.

How much genuine self-insight is possible for us? I'm sure our memory machinery provides some useful clues, if only we could learn to interpret them. But it is unlikely that one part of the mind could ever obtain complete descriptions of what happens in the other parts because, it seems, our memory-control systems have too little temporary memory even to represent their *own* activities in very much detail.

To "know thyself" more perfectly might seem to promise something powerful and good. But there are fallacies concealed behind the happy thought. No doubt, a mind that wants to change itself could benefit from knowing how it works. But then, such knowledge might as easily encourage us to wreck ourselves — if we had ways to poke our clumsy mental fingers into the tricky circuits of the mind's machinery. Could this be why our brains force us to play those games of mental hide and seek?

Just see how prone we are to risk experiments that change ourselves; we're drawn irresistably to drugs, to meditation, music, even conversation — all powerful addictions that can change our very personalities. Just see how everyone's entranced by any promise to transgress the bounds of normal pleasure and reward.

In ordinary life, our pleasure systems help us learn — and, therefore, to behave ourselves — by forcing checks and balances on us. When "enough is enough," they saturate and satiate.

But when we seize control of them through perverse tricks that break those bounds, then we can reproduce the pleasure of success, yet freed from any need for socially approved accomplishment. And that's the end of everything.

Then, what prevents such meddling? Our minds are bound by many sorts of self-constraint. For one, it's hard to see inside the mind. And even if our inner eyes could see what's there, I think we'd find that many of the agents we'd most want to change would be among the harder ones to change,

the ones which first, in infancy, helped form and shape our longest-lasting self-ideals.

The reason these are hard to change comes from their special evolutionary origin. For the long-term stability of many other mental agencies depends on a certain sluggishness of our images of what we ought to be like. Few of us would survive if, left to random chance, our most adventurous impulses could freely tamper with the basis of our personalities.

In real life, you often have to deal with things you don't completely understand. You drive a car, not knowing how its engine works. You ride as passenger in someone else's car, not knowing how that driver works. Most strange of all, you drive yourself to where you work, not knowing how you work, yourself.

But how do we ever understand anything, really? Almost always, I think, by using one or another kind of analogy. And what is that but to pretend that each new and alien thing we see resembles something we already know. Whenever a new thing's internal workings are too strange, complicated, or unknown to deal with directly, we extract whatever parts of its behavior we can comprehend and represent them by familiar symbols — that is, in terms of familiar things that seem to act in similar ways. This way, we make each novelty appear to be like something we've known before. It is a great idea, that use of words and symbols, icons, images, and names. They let our minds transform the strange into the commonplace.

This then is the point of consciousness: it is a part of the mind that is specialized for knowing *how to use other systems which lie hidden in the mind.* But it is not a specialist in knowing what those systems actually do, inside themselves. Thus one walks without much sense of how it's really done. It's only when those systems start to fail to work so well that consciousness becomes engaged with small details. That way, a person who has sustained an injured leg may start, for the first time, consciously to make theories about how walking works: "To turn to the left, I'll have to push myself that way" — and then one has to figure out, *with what?* Actually, we do not often reflect on how our minds solve their problems. I suspect that it is mainly in those moments when we recognize that we're confused that we call up what little knowledge we have about our strategies of thought. Then we find ourselves saying things like this:

"Now I must get organized. Why can't I concentrate on the important questions and not get distracted by those other inessential details?"

Paradoxically, it is very smart to realize that one is confused — that is, in contrast to being confused without knowing it. For then we can apply all our intellect to altering or repairing the defective process.

If our internal mental agents can't communicate, how is it that people can, in spite of having different backgrounds, thoughts, and purposes? The answer is that it is easier for people than for mental agents, because each person knows much more than any smaller portion of that person's mind. Besides, we overestimate how well we actually communicate. We may seem very different from one another in many regards, yet many of our concerns are based on common knowledge and similar experience. This means that we do not really need to tell each other as much as we suppose. Often, when we "explain" something, we merely show some examples of what we mean, and some non-examples; these indicate to the listener how to link up various structures already known. In short, we often just tell "which" kind of thoughts to think, but not "how" to do it.

It would be wonderful to never make mistakes. One way would be to generate such perfect thoughts that none of them are ever wrong. But such perfection can't be reached. Instead we can try, as best we can, to recognize our bad ideas before they do much harm. So we can imagine two poles of self-improvement. On one side we can try to stretch the range of the ideas we generate: that leads to more ideas, but also to more mistakes. Then, on the other side, we try to learn not to repeat mistakes we've made before. We know that all societies evolve prohibitions and taboos to tell their members what they shouldn't do. That, too, must happen in our minds: we build up banks of memories to tell us what we shouldn't *think.*

Serious learning tends to change the ways we reach our goals. Humorous learning tends to change the goals themselves.

Our culture regards humor as a pleasant but pointless luxury we do not really need, a thing detached from practicality. Actually, humor has an important, practical function in helping us learn to suppress certain ways of thinking. It censors thoughts.

Humor as a censor would explain why humor is so often concerned with prohibitions and mistakes. Our most productive kinds of thinking are precisely the ones that are most liable to error. Careful, logical thinking can sometimes be made relatively error-free, but then it rarely leads to powerful new ideas. Much more can come from working with analogies and metaphors. The problem is, analogies are often wrong, and metaphors can easily mislead. That's why so many jokes are based on recognizing comparisons that are inept or inappropriate.

Why is it so hard to see that humor plays such

vital roles? Because, I think, it has a funny side effect: when humor turns off other thoughts, it also shuts off thoughts about itself — and thus becomes invisible.

We like to think of memories as though they could restore the things we've known in the past. But memories can't really bring things back; they only reproduce some fragments of our former states of mind, when various sights, sounds, touches, smells, and tastes affected us. But then, what makes some recollections seem so real? The secret is that real-time experience is just as indirect! The closest we can come to apprehending the world, in any case, is through descriptions which our agents make. In fact, if we inquire, instead, about why real things seem real, we'll see that this depends, as well, on memories of things we've known before!

For instance, when you see a telephone, you have a sense, not only of the aspects you can see — its color, texture, size, and shape — but also how it feels to hold it to your ear. You also seem to know at once what telephones are *for:* that you speak into it here, listen there; that when it rings you answer it; that when you want to call, you dial it. You have a sense of what it weighs, of whether it is soft or hard, of what its other side is like — although you haven't even touched it yet. Those apprehensions come from memories.

Whenever you "get a good idea" or solve a problem or have a memorable experience, you activate a K-line to "represent" it. A K-line is a wirelike agent that attaches itself to whatever mental agents are active when you solve a problem or have a good idea.

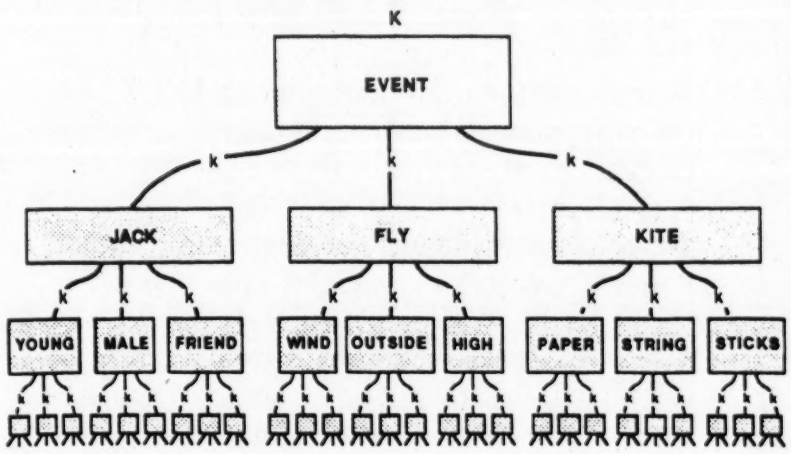
When you activate that K-line later, you arouse the agents attached to it, pulling you into a "mental state" much like the one you were in when you solved that problem or got that idea. Because so many of the same agents are active again, you should now find it easier to solve similar kinds of problems!

In other words, we "memorize" what we're thinking about by making a list of the agents involved in that activity. Making a K-line is like making a list of the people who came to a successful party. Here is another image of how K-lines work, suggested by Kenneth Haase, an MIT student who had a large influence on this theory.

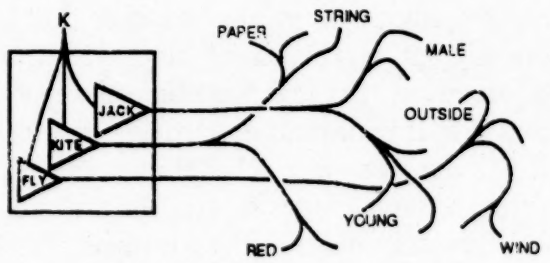
"You want to repair a bicycle. Before you start, smear your hands with red paint. Then each tool you need to use will end up with red marks on it. When you're done, just remember that red means "good for fixing bicycles"! Next time you fix a bicycle, you can save time by taking out all the red-marked tools in advance.

"If you use different colors for different kinds of jobs, some tools will end up marked with several different colors. That is, each agent can become

We keep everything we learn close to the agents which learn it in the first place. **That way, our knowledge becomes easy to reach and easy to use. This is based on the idea of a type of agent called a "Knowledge-line" or "K-line," for short.**



K-line attached to many Agents.



K-line attached to three K-lines.

attached to many different K-lines. Later, when there's a job to do, just activate the proper K-line for that kind of job, and all the tools used in the past for similar jobs will magically become available."

This suggests a way to make our machine learn to do this job more quickly and easily: we can build a memory that simply keeps a record of which lower-level action-agents were activated during the "Trans-action." So, when we play that sequence back, this "trans-script" would put a second apple in that pail — without invoking any higher-level agencies at all.

We could call this "learning by rote" or doing things so automatically that one can think of other things at the same time. When such a script can work at all, it can work very fast because it has no bureaucracy. But rote-learned skills have serious limitations. They are inflexible because they can work only in narrow ranges of conditions — precisely because they lack bureaucratic

superstructure. They have no higher-level anchor points to use to call for help when anything goes wrong. Because of the lack of hierarchy, there is no place to appeal when an agent gets into trouble.

When someone says "John threw a ball," you probably unconsciously assume some certain set of qualities of color, size and weight. These are your assumptions by default. They might be derived from some ball you owned long ago or, possibly, your newest one. But since such optional details are usually too weak to hold against the sharp insistence of reality, other stimuli will find them easy to detach or otherwise adapt. Defaults don't make strong images, and when they turn out wrong, we aren't too surprised.

But why use defaults at all, instead of simply seeing what's really there? *Because, unless we made assumptions, the world would simply make no sense.* It would be as useless to perceive how things "actually look" as it would be to watch the random dots on untuned television screens. What really matters is being able to see "what things look like" — and this is why our brains must have special machinery for representing what we see in terms of artificially distinct "objects" or "things." For the very idea of an object embodies many assumptions we make that "go without saying" — that an object has substance and boundaries, that it existed before we saw it, and that it will remain afterwards — in short, that it will act like most other things. For example, we never see all sides of an object at once, yet we always assume that their unseen sides exist. Perhaps the larger part of what we know is represented by default assumptions, since there is so little we know with perfect certainty.

We use default assumptions in personal relations, too. How does the writer's craft evoke such lifelike characters? It's ridiculous to think that people could be well-portrayed in so few words. Instead, our writers use phrases which activate great networks of assumptions that lie already in their readers' minds. It takes great skill to create those illusions — to activate unknown processes in unknown readers' minds and to shape them to the writer's purposes. Indeed, in doing so, a writer can surpass reality. For, although words are merely catalysts for starting mental processes, so, too, are real things: we can't sense what they really are, but only what we see them to be.

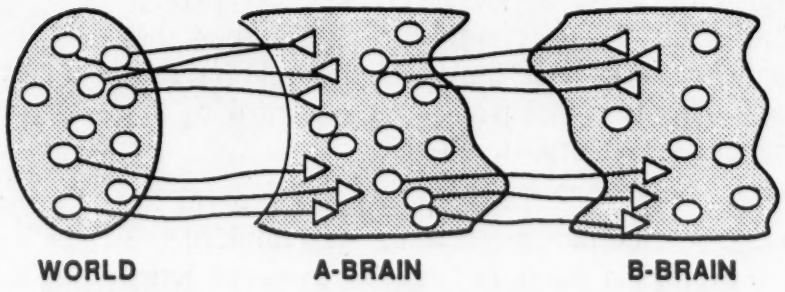
It is not only a matter of language, this ability to simplify or encapsulate other mental processes. We also use this ability to "conceptualize" — that is, to treat ideas as though they were objects — in other areas of thought. Suppose one manages to solve a hard problem after a long and painful search. If we can apply our powers to treat the steps of what we did as though they were parts of an object, then we can "think" about what we did and reassemble the parts that "helped" into a new structure which will do what the old one did, except with much more speed and with much less thought.

An explanation of the difference between older and younger children was first proposed by Seymour Papert in the 1960s, when we first started to explore "Society of Mind" ideas. Most previous theories had tried to explain Piaget's experiments by suggesting that children grow new, different kinds of reasoning as time goes by. That certainly is true, but the importance of Papert's conception is in emphasizing that it is not merely the ingredients of reasoning that matter, but how they're organized: a mind cannot really grow very much by only accumulating more and more new knowledge. It must also develop new and better ways to use what it already knows. That principle deserves a name.

Papert's Principle: Some of the most crucial steps in mental growth are based not simply on acquiring new skills but on acquiring new administrative ways to use what one already knows.

Somehow, each child learns *better ways to learn.* But it is very hard to guess the nature of those strategies only from watching what the child does. The problem is that those "learning-learning" strategies are twice removed from behavior. If it is hard to guess how our A-brains produce our observable behavior, it must be more than twice as hard to guess how our B-agencies learn to train our A-agencies! Perhaps, in order for a child to become unusually smart, its B-brain must experience a "lucky accident" — the kind that focuses a hidden but persistent interest upon the process of learning itself. If so, then perhaps a major concern for education should be to find out how to get children less concerned with solving particular external problems and more involved in learning better how to learn.

Imagine a simple brain composed of separate "proto-specialists," each concerned with some important need, goal, or instinct like food,



There is one way for a mind to watch itself, and yet still contemplate what's happening. Divide the brain into two parts *A* and *B*. Connect the *A*-brain's inputs and outputs to the real world — so it can sense what happens there. But don't connect the *B*-brain to the outer world at all; instead, connect it so that the *A*-brain *is* the *B*-brain's world!

drink, shelter, reproduction, or defense. On one side, there must be administrators to resolve conflicts between those separate specialists, so that they can work together to control a single body without becoming engaged in paralyzing conflicts. On the other side, each specialist needs ways to use the knowledge that the others gain to fuse the the system together. In animals with limited abilities to learn, a loosely-knitted league of almost separate agencies with almost independent goals might be enough to survive in a suitable environment.

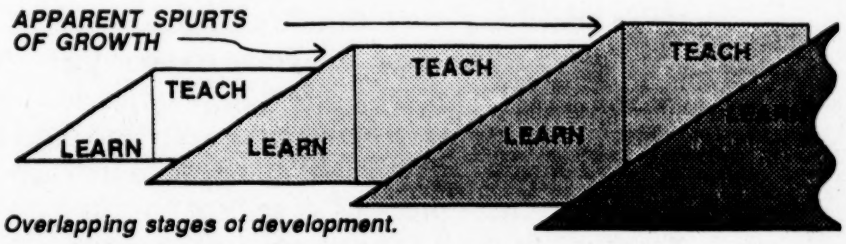
But human minds don't merely learn new ways to reach old goals: *they also learn new ways to learn new goals.* If we did that without constraint, we'd soon fall prey to accidents — both in the world and in the mind. At the simplest levels, we need protection against accidents like learning not to breathe; at higher levels we must not acquire lethal goals like learning to suppress our other goals entirely — the way that certain saints and mystics do. What sorts of built-in self-constraints could guide a mind toward goals that won't destroy itself?

No possible inheritance of built-in genes can tell us humans what is good for us! For, unlike all other animals, we build for ourselves the worlds of problems that we face. Then what could teach us what is "good," if our values change from each generation to the next? The answer is that our goals must be constrained, not by our genes, but by our social heritage — and that's exactly how we work. *Unlike the other animals, we each must learn our goals anew, from one another, through our traditions and cultures.* But still the question remains: what mechanism leads us to do that? How could machines that are built by genes help transfer sociocultural goals — without the least idea of what they are? This is done in indirect but specific ways — by exploiting what we call affection, attachment, and love.

Thus our earliest emotions have roots in the machinery through which our original, inborn proto-specialists control what happens in our brains. But soon our cultural surroundings begin to work to overrule those built-in schemes and start to try to teach us what we *ought* to feel. First our parents, then our teachers and friends, and finally our own self-ideals try to impose on us their rules for how to use the mixed-up remnants of those early states; they teach us how and when to let each kind of emotion-sign show. By the time we're adults, our own expression-systems have become too complicated even for ourselves to understand. What's more, once we have passed through all the stages of childhood, our grown-up minds have been rebuilt too many times to clearly remember or understand what infants feel. We're too far removed to be sure that our sympathies, however strong, are authentic.

Yet how could all these steps and stages lead to any sense of unity? Why wouldn't they, instead, lead us to feel more fragmentary and dispersed? I think the secret is that when each new stage's work is done, its structure still remains available for further use. Then those remnants of our previous selves supply our personalities with a powerful resource: for whenever one's present mind becomes confused, it can exploit those stored-up, earlier minds to try old ways to manage things. Although those older selves may not have been so smart, they had much more experience and found many useful ways to cope.

Yet, on the whole, the present personality is almost wholly unaware of this; it has no sense of what it owes to older personalities, because it cannot share their conscious thoughts. And so we just imagine that we have an everpresent Self — a sort of ghostly person-friend inside the head, whom we can always ask for help.



Overlapping stages of development.

How could an early stage teach anything to a later one, when it knows less than its student does? As every teacher knows, this is not as hard as it might seem. For one thing, it is usually easier to *recognize* a solution to a problem than to *discover* a solution. A teacher need not know how to solve a problem, to be able to reward a student for doing so.

What could be the biological and psychological purposes of the complex, unconscious self-images which grow inside our child-minds?

The answer seems quite clear to me: that's how Selves start! Consider that our models of ourselves are so complex that even adults can't explain them. Surely no fragmentary infant mind could know how to build such a complicated thing without some model to base it on. We aren't born with built-in Selves — but, fortunately, we do arrive with built-in human caretakers. And then, our ancient attachment mechanisms force us to focus on our parents' ways, to construct crude images of what they want us to be like. Then, stage by stage, those simple models grow until they lead powerful, coherent policies of thought.

This is how the values and goals of a culture are passed from each generation to the next. It is not the same as the "ordinary" kinds of teaching based on signals representing failure or success. Instead, our children learn their deepest values under the influence of attachment-related signals. This is why, when we maintain our standards, we feel virtuous rather than merely successful and

why when we violate those standards we feel shame and guilt rather than mere disappointment. These kinds of emotion are not the same, because they're wired differently.

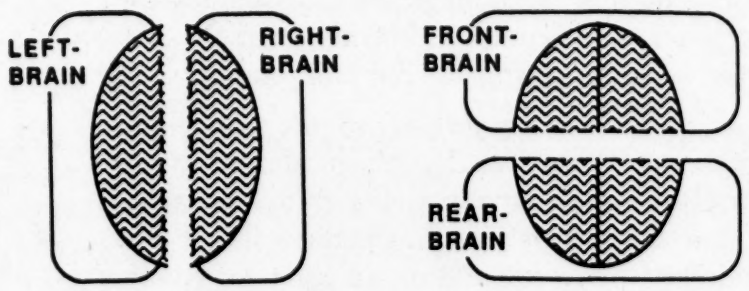
Why should mental growth proceed by anything like steps at all? Why can't we grow by steady, smooth development?

There are many reasons why it is easier to construct large, complicated things in separated episodes. They are much the same reasons why all large corporations have divisions and departments, and why all complicated living things are divided into organs.

Splitting structures into parts makes them easier to build, maintain and change.

It is always a dangerous experiment to make changes in things that work. What if the new way seems better at first, but later shows some serious flaws — can we get back to where we were? One way might be to keep such complete records that we could "undo" all the changes we've made. But what if those changes caused our quality of thought to become so poor that we could no longer recognize how poor it had become? A safer way would be to keep that older mind intact and build a new one close to it. Then we can use that "previous stage" not only as a "backup" to use if the new one fails, but also to evaluate the new one's performance.

Indeed, one very conservative strategy would be not to permit the new stage actually to take control until it demonstrates the ability to out-perform its predecessor. In that case, an outside observer would see "plateaus" followed by sudden spurts of growth. Yet that could be illusory, for the "silent period" might actually conceal the new mind's time of fastest growth. The best part of this scheme is that it permits the person to continue to function while growing — to maintain "business during renovations." For the "working version" can hold still, while the new one catches up and gets ahead.



If you agree that each person has both a *left-brain mind* and *right-brain mind,* then you must also agree that each person also has a *front-brain mind* and a *back-brain mind!* To understand what we call the Self, we'll need to understand what Selves are for. *One function of the Self is to keep us from changing too rapidly.* If we changed our minds too recklessly, we could never know what we might want next. We'd never get much done because we could never depend on ourselves.

It can make sense to think that that there exists, inside your brain, a society of different minds. Like members of a family, they can work together to help each other, each still having its own mental experiences that the others never know about. Several such agencies could have many agents in common, yet still have no more sense of each other's interior activities than people whose apartments share opposite sides of the same walls. Like tenants in a rooming house, the processes that share your brain need not share one another's mental lives.

If each of us contains several such mini-minds, could any special exercise help put them all "in closer touch"? Certainly there are ways to become selectively aware of processes which are not usually conscious at all. But as for becoming aware of everything that happens in one's mind, that surely would leave no room for thought.

As far as I'm concerned, the so-called problem of "body and mind" does not hold any mystery at all:

Minds are simply what brains do.

Whenever we speak about a mind, we're simply speaking of the processes by which our brains proceed from each state to the next state. And this is why minds seem so separate from their physical embodiments: it is simply because nothing can affect that state-succession except the connections that govern how each agent changes its state — and thereby causes other agents to change *their* states.

In earlier times, we could usually judge machines and process by how they transformed raw materials into finished products. But it makes no sense to speak of brains as though they manufacture thoughts the way factories make cars. The difference is that brains use *processes that change themselves* — and this means that we cannot separate such processes from the products they produce. In particular, our brains are usually engaged in making memories, which change the ways we'll subequently think.

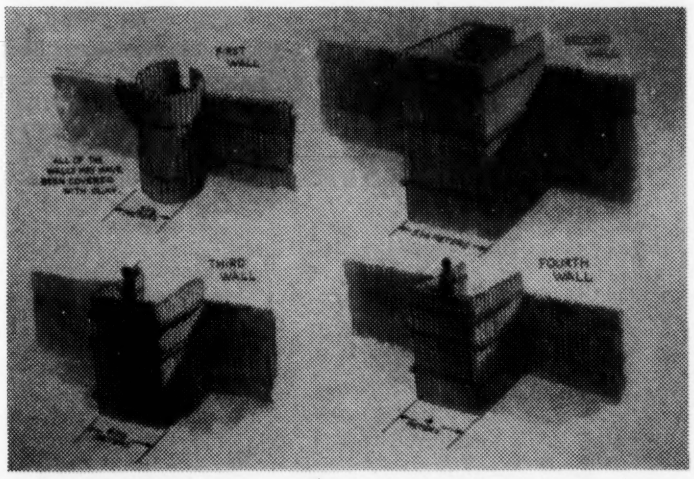
Because of this, we cannot trust our commonsense judgments about "thinking machines." Even our technical, scientific theories about such matters are still embryonic, since the whole idea of self-modifying processes is relatively new to science.

The principal activities of brains are making changes in themselves. ■

Archaeology

One of the few remaining sciences that embraces amateur participation is archaeology. An awful lot of fantastic research is carried out (literally) by eager bands of students and volunteers sifting through old layers of silt. There's another kind of field work going on these days, too: Experimenters shed their modern habits and by taking up ancient tools reconstruct the past by living it for a while. The findings of both these kinds of research are given colorful play in this classy journal, which might be mistaken for an enticing travel magazine. Between the ads and the magazine's biannual listing of excavations in progress, it's the best place to find a dig to work on.

—Kevin Kelly [Suggested by Thor Conway]



The partial reconstruction of the East Stockade at Cahokia Mounds includes large square bastions with raised platforms for guards or soldiers placed along the walls at 20-meter intervals.

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The first of the Christian ► burials excavated at Tipu, Belize; it is typical of those found under the church floor.

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Tunisia: Kerkouane/Kelibia (July-September, daily, 8 a.m.-12 noon and 2-6 p.m.; excavations July 1986). The only completely preserved Punic town, abandoned in the 3rd century B.C., this site is unique in the Mediterranean. It features domestic architecture, including a temple, baths and a necropolis. On-site museum will open July 1986. Caves and other sites in the area. *Getting there: From Tunis take the road to Korba Kelibia. No appointment necessary for admission or guide; accessible by train; hotel and Florida restaurant in Kelibia 12 kilometers; camping 10 kilometers; site accessible to persons in wheelchairs. Volunteers accepted. Contact: Mohammed Fantar, Institut National d'Archeologie et d'Art, 4 Place du Chateau, Tunis, Tunisia 1008 (tel) 261-693.*

Biblical Archaeology Review

Among those who take every word in the Bible literally, new archaeological data, translations, or interpretations are often superfluous. For the more adventurous souls, however, Biblical history can be a source of excitement and stimulation; a companion to faith rather than a threat.

Despite its name, ***Biblical Archaeology Review*** *is anything but a stuffy academic journal. It's a readable, full-color magazine devoted to the discoveries and controversies swirling around Middle-eastern excavation sites. Are these Iron Age remains merely an old farm house or are they the actual altar of Joshua? Is the "Garden Tomb" in Jerusalem the burial place of Jesus as is often claimed? Have Sodom and Gomorrah been found? It's hard not to get caught up in these questions even though their immediate relevance to one's daily life may be slim.*

BAR*, published bimonthly by the Biblical Archaeology Society, maintains an even-handed, objective tone and counts both Jews and Christians (and archaeologists!) among its readers and staff. Highly recommended.*

—Jay Kinney

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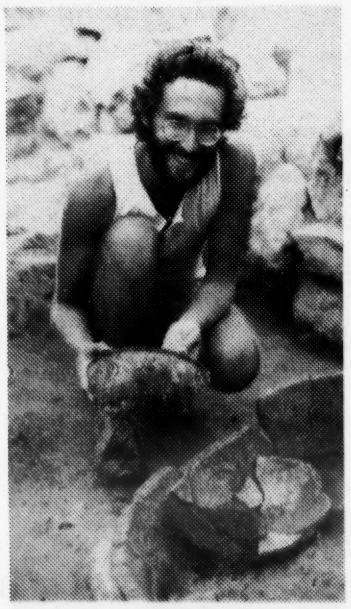
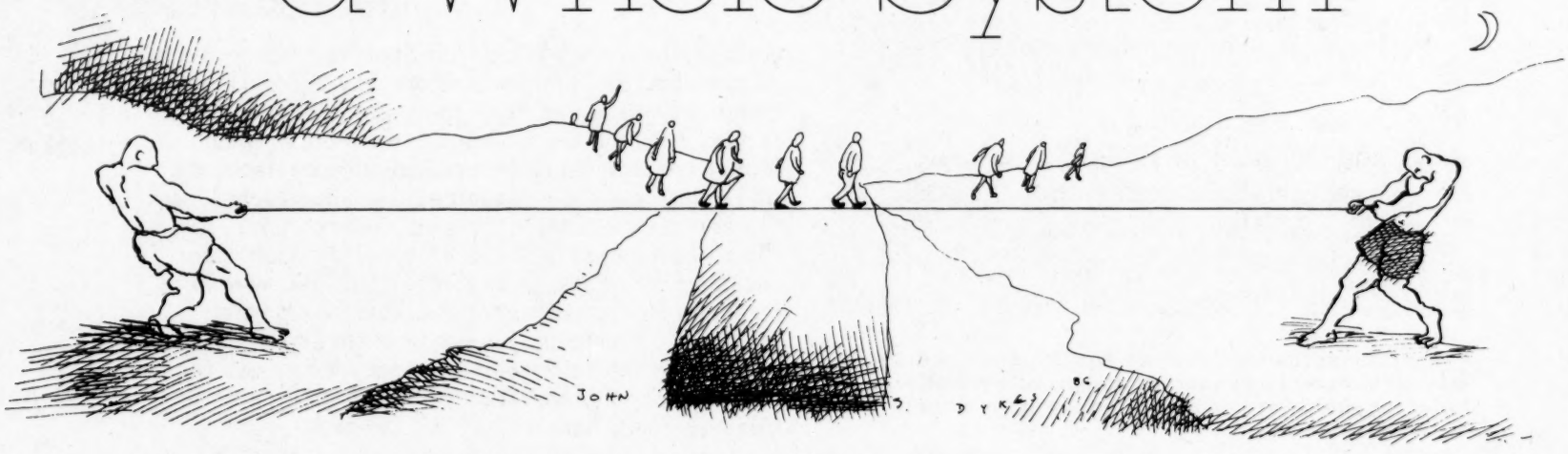


It fits! **At Tel Miqne, two decorated pottery sherds are reunited.**

Under one bench, a hollowed-out cavity, called a repository, holds bones that the ancients had collected from the benches each time a new generation was to be buried. It's very likely that some of these bones are original burials from the First Temple period. With the discovery of these repositories we can understand such Biblical phrases as "slept with his fathers" and "gathered unto their fathers."

Constructing Peace as a Whole System



MAKING THE WORLD SAFE FOR CONFLICT

by Mark Sommer

illustrations by John Dykes

FOR THE PAST TEN YEARS, I have been looking for a way to think about peace. What's odd is that when you try to think about peace, you end up mostly thinking about war. Peace itself has no positive identity. It's what you walk by on the way to something interesting. But surely peace is something more than the mere absence of something else. It must be something in itself, a real experience. How will we ever find it if we don't know what it looks like?

It occurred to me recently that maybe we've been looking in the wrong place for peace. Perhaps it's not somewhere in the sky above us, where we've always expected to find it, but more at eye level in many of the processes, institutions, and events we take most for granted. Peace is not the rarefied and unblemished state of our fondest imaginings, but a more common experience that includes conflict but is not consumed by it. Peace is not a fixed or final state of being but an experimental and evolving process, necessarily imperfect and always tending toward a harmony that it may never fully attain.

There are lots of war buffs. Not too many peace experts, though. One is Mark Sommer, who began researching peace first as a political science student, then as a conscientious objector doing alternate service, later as a Zen disciple of Suzuki Roshi, and most recently as a homesteader. Sommer's description of peace as a whole system has made me notice how its paradoxes (peacemaking conflict, occasional violence) distract us from completing the sustaining peace lying close at hand.

—Kevin Kelly

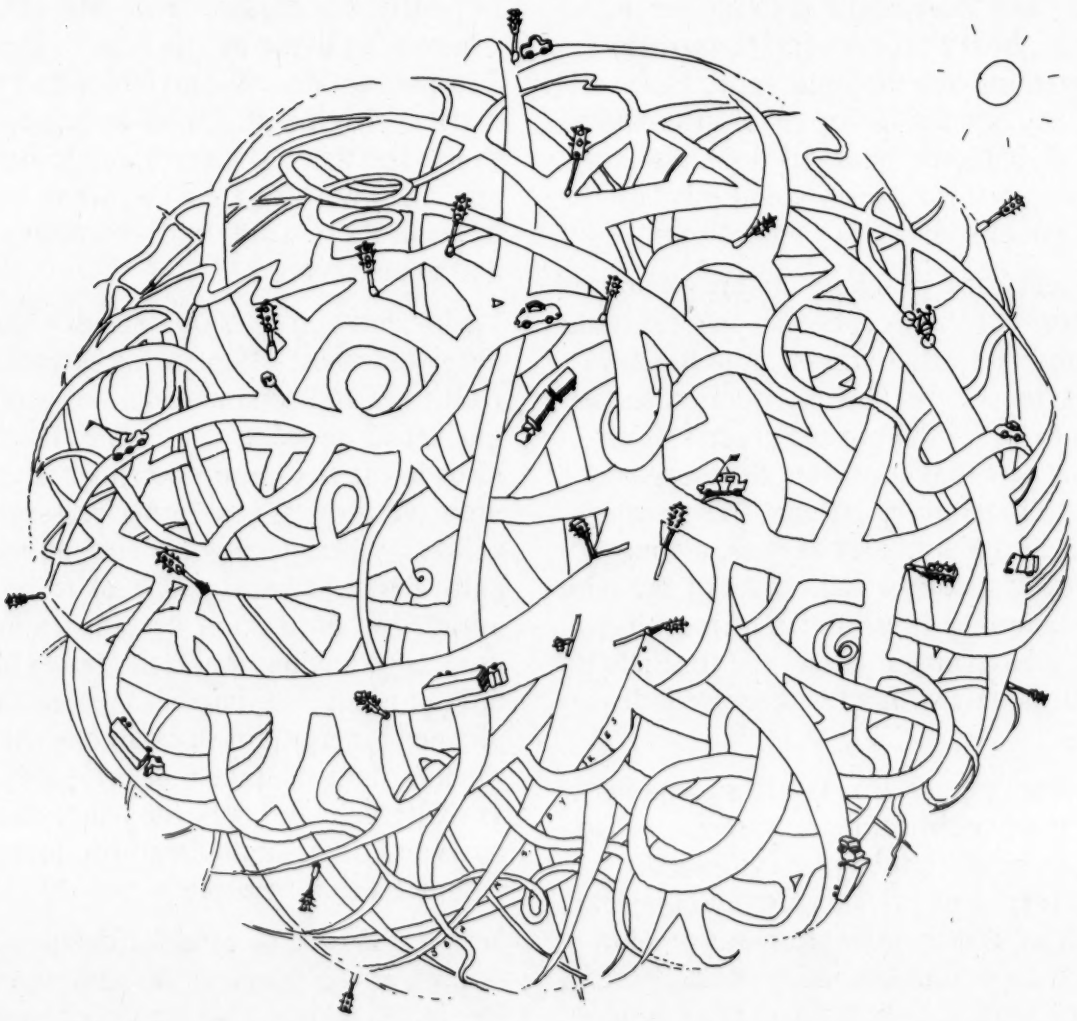
To this understanding of peace as an imperfect and evolving process, I have recently added another simple notion: the idea of peace as a whole system, with qualities resembling other whole systems. Both as they occur in nature and as they are designed by man, peace systems (as I call them) channel potentially destructive conflicts into processes that dissipate their violence and release their latent creativity. Peace is an organic rather than mechanical concept, a live rather than manufactured process. This distinction has many implications for the kind of peace we get when we try making it. Peace can be of many kinds, and not all of them are sustaining. War is often the consequence of a forced peace. For example, the badly conceived Treaty of Versailles, which negotiated a peace among the Allies and Germany in 1919, doomed Europe to a return engagement 20 years later. Likewise, the repressive peace of the Marcos regime in the Philippines first spawned guerrilla war and then a sudden and bloodless "evolution" into what one hopes will become a more genuine peace.

It is vital to sustain this distinction between a true and an illusory peace, a healthy and an unhealthy state of calm, since one constitutes freedom, the other tyranny. Peace based on repression is no peace at all. A forced peace has its systems, too. They are all too easy to describe because there have been so many of them.

Sometimes they may penetrate the institutions of a genuine peace system and turn it toward war, all the while mouthing the rhetoric of peace. In the end they become war systems. Though they differ widely in structure and circumstance, false peace systems all ultimately depend on the threat of violence to enforce their brand of order.

They share, too, a mechanistic view of the universe — fixed, hierarchical, highly regulated with linear patterns of thought and belief, and viewing history as a forced march toward perfection. The ideologies used to justify false peace systems envision a future point in time when their doctrine will triumph and history will end.

Peace systems already exist in society on every scale and circumstance. These systems represent peace played out in its most mundane contexts. City traffic is a peace system and a remarkably good one. In the absence of lights and laws, the streets would be paralyzed within minutes by accidents and arguments. But in the presence of a set of rules, a means to determine violations, and the machinery to enforce the law, city traffic has become an astonishingly effective peace system. What is most remarkable about city traffic is its



nonpartisan nature. It is a system without a leader other than the technology itself, which simply enforces a pattern and rhythm of traffic based on easing the flow throughout the network. To my knowledge, no one has ever sought to take over city traffic and run it for personal advantage.

Pedestrian as it may be, traffic provides an extraordinarily useful precedent for peace systems at the global level. Indeed, it is already a global system since it links every nation with every other. Howard Kurtz, author of a proposal to create a global satellite monitoring agency (*WER* #50, p. 65), uses this metaphor in likening the function of such an institution to that of an air traffic control system. Satellites would not be maintained by adversaries but by an independent and nonpartisan global authority, and the information gathered would be made available to the world community. The maintenance of a nonpartisan source of data would balance the often biased accounts kept by the contending parties.

There are many other nonpartisan peace systems already present at the global level — the international mail system and the telephone network, for examples. These are largely open systems with access available to most all who wish to use them. Blockages are inevitable from time to time, and constrictions in communications between East and West continue to impair the health of the global peace system. Nevertheless we have something here to build upon. Peace systems already operate in dozens of little-known roles at the global level, but their dependability leads us to forget them. "How could this be peace?" we ask ourselves. "It's so ordinary!"

The components of a peace system are all around us. Even where conflict is endemic, peace systems of a very imperfect variety thrive. Within their jurisdictions, most cities, towns, counties, states, and nations carry on the prosaic process of negotiating conflicts that constitute the everyday nature of a political peace system. The essential elements are all present: a set of laws, a court system, a set of sanctions, and norms of behavior that incline toward self-restraint. The machinery of democratic government allows for conflicts to be played out largely without cataclysm in domestic politics.

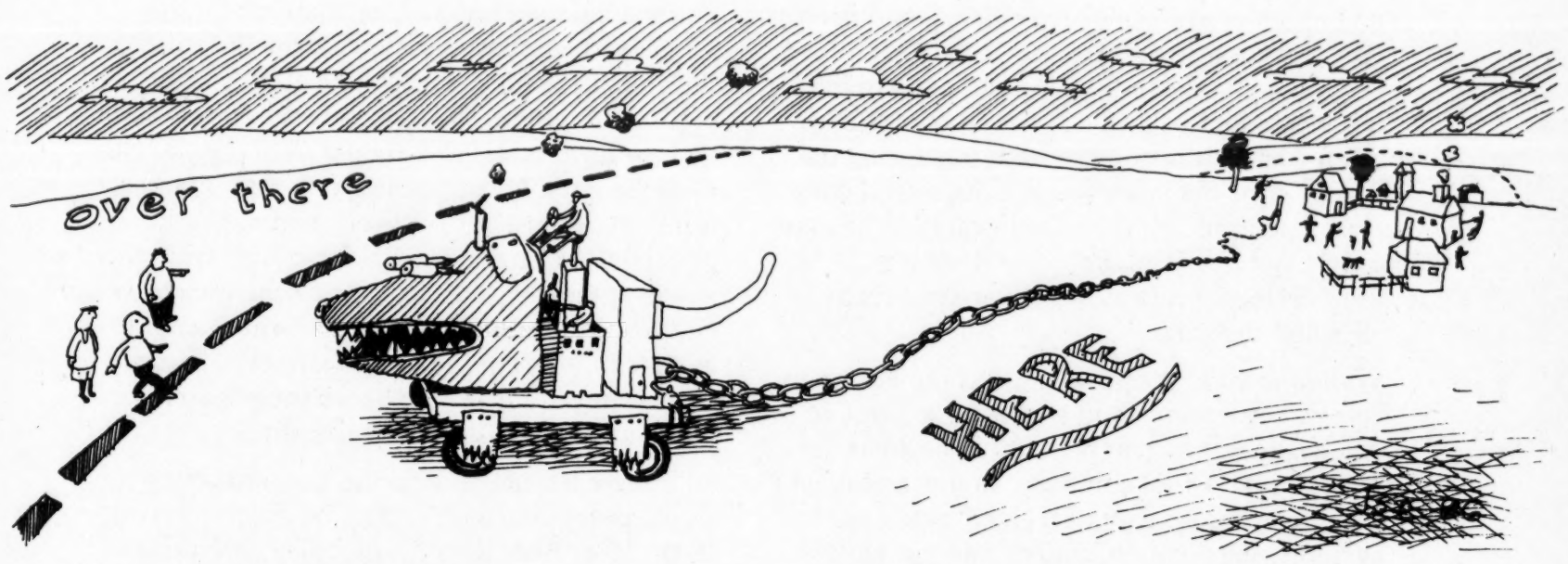
There is obviously much that is stifling and inequitable in many political peace systems. All too easily they can be disfigured into systems of bureaucratic inertia or private gain, and they can be swallowed by systems of war or war preparation. Then, in Orwellian fashion, war itself comes packaged as a kind of peace system (Pax Americana, Pax Sovieticus). Yet in their more ordinary expressions, domestic peace systems (at least in democratic nations) provide us with imperfect but remarkably sturdy models for the kinds of structures and processes we will need for a successful global peace system.

Nature may provide the clearest example of a working peace system. Though nature lurches to extremes, its cycles revolve around a moderate center. It is unpredictable in its details, but reliable in its larger patterns. In a cultivated state, nature is sometimes a peace system, sometimes not. Monocultural farming, for example, is a kind of forced peace in which natural diversity is replaced by a single crop dependent upon the heavy use of chemical fertilizers and pesticides that eliminate benign along with troublesome organisms in soil, thus threatening one of the most essential qualities of living systems — accomodating conflict. The organic gardening and farming movement aims to strengthen these qualities of natural living systems by multiplying rather than replacing life, adding to its already abundant natural variety still more diversity and vitality.

Both the promise and problems of consciously designing a peace system have been brought home to me by the challenge of establishing a self-sufficient organic farm. My wife, Sandi, and I have been living on the edge of the woods for fifteen years now. We arrived with our baggage stuffed with the principles we hoped to uphold — to live lightly on the earth and to do no harm to any creature. Along the way we've had occasion to recall those words with more than a little irony and amusement.

We located ourselves in a meadow surrounded by deep wilderness. By planting several hundred fruit trees and ornamentals, we seem to have quickened the pace of life here. There are more birds in the trees, more worms in the ground, more wildflowers and lusher grasses. Planting willows, pines, eucalyptus and redbuds in a raw gully, Sandi has nursed it back to health and initiated what has now become a spontaneous process of healing in which grasses and trees she did not plant have begun to reseed themselves. A planned synergy is at work among the ornamentals she has planted, since they serve simultaneously as shelterbelts to break the wind, habitats for birds and other small creatures, forage for bees, and pleasure for people.

Yet we still need to consider defenses. Coons, skunks, and porcupines are common and deer run free in large herds. We succeeded in screening out



the deer without harming them by building a six-foot-high fence around the perimeter of the meadow, but the coons and porcupines were undeterred. One porcupine harvested an entire year's strawberry crop. Jays saucily nibbled peaches they didn't even help to grow. Our neighbor, Jack, a devoted student of Zen, was beset one summer by several families of coons intent on harvesting his corn and fruit trees. Having been counseled by a Buddhist teacher in Sri Lanka that he had accumulated five hundred additional lifetimes on the Great Wheel for the murder of a porcupine a few years earlier, he proceeded with a heavy heart to accumulate six thousand more in the course of saving a remnant of his devastated crops.

We've given a lot of thought to how we might protect our creatures without threatening or killing their predators. Ultimately Sandi came up with a solution, a defense that protects without threatening: an Akbash livestock guardian dog. For centuries, the great white Akbash has protected herds of sheep from both wolves and bears on the steppes of Asia Minor, often in the absence of the shepherd. But it is neither a herder nor a hunter. While the Akbash is extraordinarily strong, it is also uncommonly gentle. If raised with the animals it is to protect, the dog will bond with them as if it were their own mother. She will fiercely protect them from anything sensed as a threat, but only if it enters her territory. She has no impulse to initiate attack.

Have we established a successful peace system? "Peaceable kingdom, ha!" cried Sandi one afternoon a few years ago as she held up the corpse of a duckling, while Hannah, our terrier mix, cringed forlornly in a corner of the garden, wondering what she'd done wrong. "Some peace system!," we laugh ruefully as we load the air gun to scatter the jays that peck at our just-ripe apricots. To be truthful, we've accumulated a few thousand extra lifetimes ourselves in the course of building this homestead peace system.

Despite the obvious disparity of scale and circumstance between a remote rural homestead and a global political system, there may be several clues to use in designing that larger system. The first is that despite one's best intentions, there is inevitably some violence in any system of human design. The second is that while one can't wholly eliminate such violence, one can do much to minimize it, not least of all by devising strategies which, like our Akbash, protect without threatening.

Observing natural systems at work around us on this farm, I've noticed several essential qualities. Peace as a whole system is:

Diverse: A peace system at the global level would need to be extraordinarily flexible and open to a vast range of interests.

Evolutionary: Evolution is a thoroughly experimental process, learning from its own mistakes and tending always toward greater complexity and connection throughout the system. Healthy political evolution, like its biological counterpart, is a highly imperfect process, but it is also self-correcting. Popularly elected parliaments and well-rooted spontaneous citizen activism are two tools for self-correction.

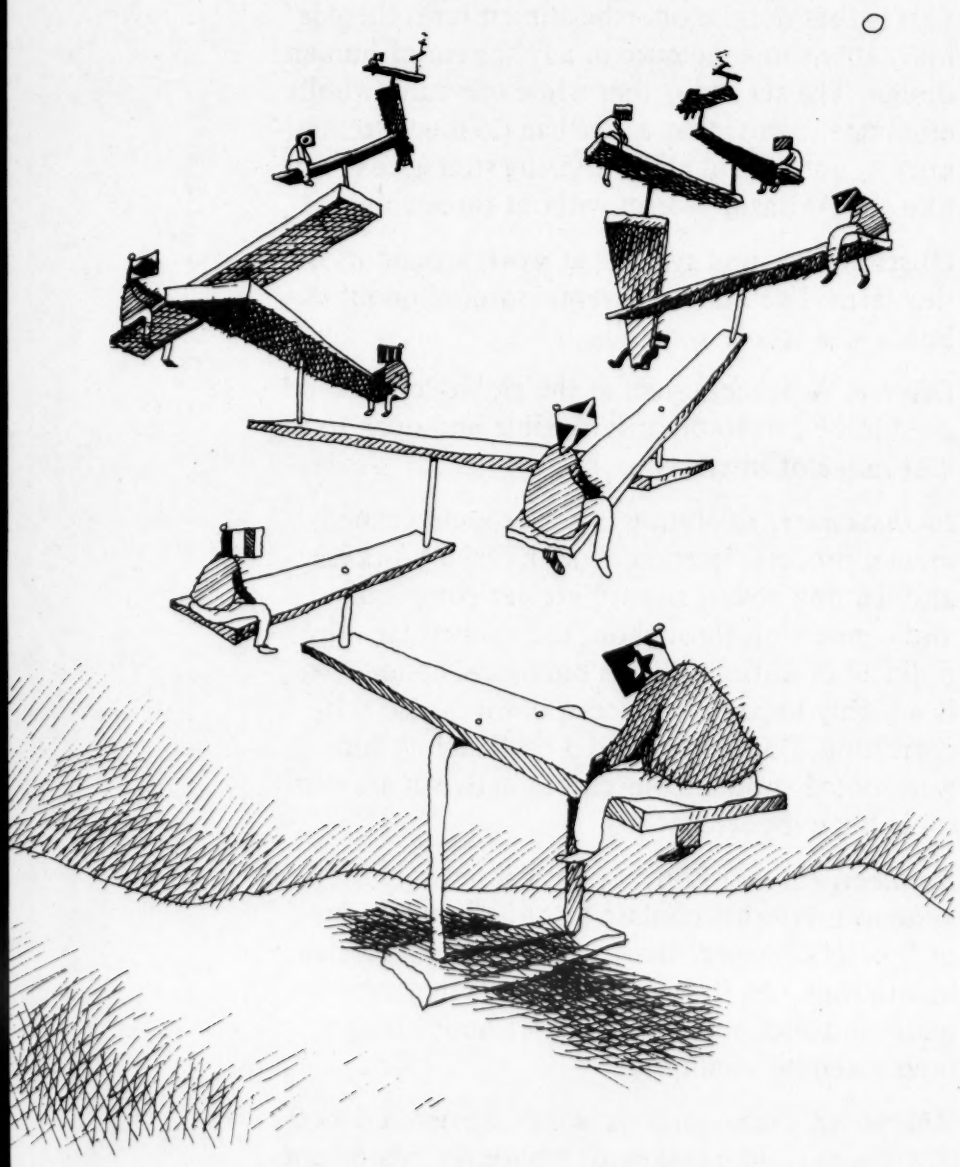
Resilient, robust: Robust political peace systems inevitably contain small accumulations of "social diseases" that corrupt and abuse their institutions. Yet if they are resilient, they can withstand such minor plagues without losing their essential vitality.

Abundant, redundant: A wisely structured political peace system makes allowance for misfortune

and mischief and builds redundancy into itself. Rather than depending on any single institution or group, it seeks to broaden and decentralize responsibilities so particular components may fail for periods of time without paralyzing the functions of the larger system. Successful complex systems are built on the integration of many simple systems. A global peace system must base itself on local peace systems that are already alive and thriving.

Symbiotic and synergistic: Just as the Pentagon, defense contractors, and academia coalesce in the synergistic war system popularly known as the "military-industrial complex," so it is possible to strengthen the synergy of a global peace system by improving communications and mutual aid among the myriad groups and institutions operating at the grassroots level. Together they could achieve far more than the sum of all their efforts made in isolation from one another.

In a cybernetic way these smaller systems constitute the foundation for a larger system. A sound global system grows out of the health of these many smaller and more local systems. Unfortunately, the reverse is also true: the ill-health of the global system can infect the quality of peace at all lower levels. This link between the global and the local draws ever tighter with the advance of globe-girdling communications and weapons technologies. It has effectively eliminated the possibility of opting out, taking refuge from the global argument and suing for a separate peace. On the other hand, it means that what each of us does to improve the quality of peace in those areas nearest to us will enhance the possibilities for peace in the distant global realm.



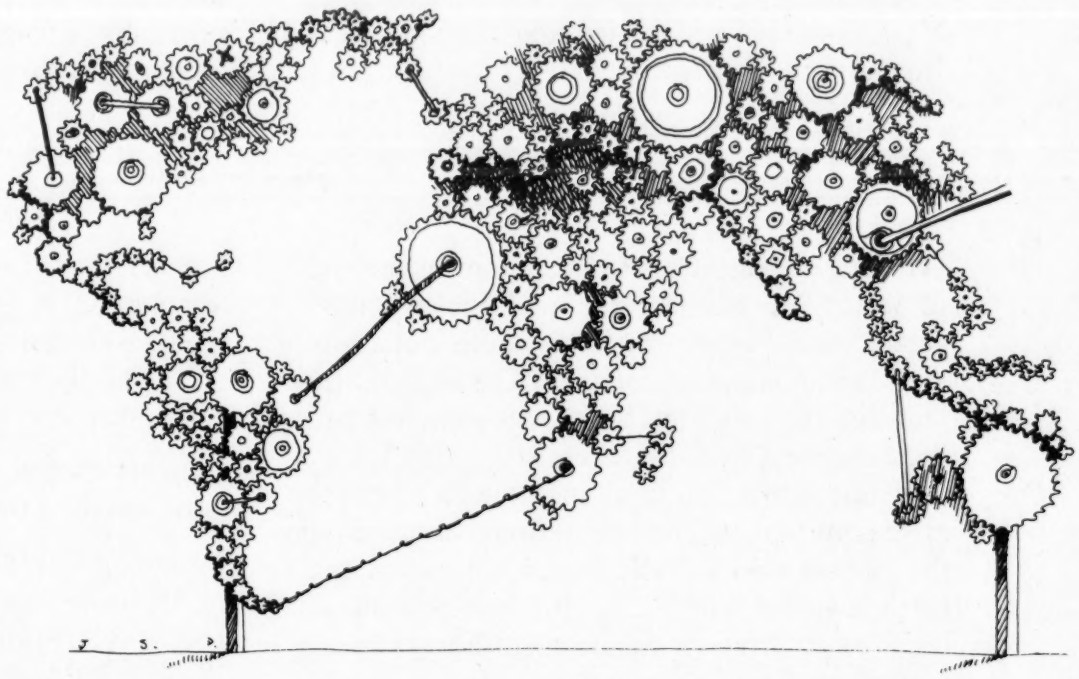
Still, there is work to be done in constructing a global peace system that can't be accomplished at any level other than the global. Institutions and structures must be established, laws enforced, and norms of behavior agreed upon and accepted. It is beyond any individual to describe in detail the architecture of this global peace system. That is a task for many minds working in many places. I am suggesting that if war can be planned and organized as a system to produce harm, peace can also be planned and designed as a system to produce harmony. As we design the flow of traffic in city streets to prevent accidents and ensure free flow in the system, we can plan some aspects of global peace.

The drafters of the U.S. Constitution engaged in just such a deliberate design process, debating over a period of years the best means of establishing and maintaining a stable democratic republic. The record of their deliberations is contained in The Federalist Papers. They were not naive about the nature of human motivations and the perennial attractions of power. They assumed that human beings would always act primarily in their own self-interest and planned their institutions accordingly. They shrewdly divided authority within their peace system in such ways as to impede undue concentrations of power, even at a certain cost in efficiency. What they produced in the U. S. Constitution was an operating manual for a working peace system.

And their design has proven more durable than anyone at the time could rightly have expected. With good reason we have since become a good deal more skeptical of our capacity to design the social systems we inhabit. The twentieth century has given us all too many examples of overdesigned political systems. Clearly there is as much danger in doing too much planning as in doing too little. But what if, sadder but wiser now about the power of reason to rule, we once again engaged in a process of deliberate design — this time not as founders of one country but as founders of one planet?

A Four-Dimensional Global Peace System

No individual or group is capable of devising a peace system fully acceptable to the immense diversity of peoples and interests represented in the global community. Even to attempt to sketch such a system requires a certain audacity, but it is still important to try. What we need, of course, is not a few but a great many hands working in many places to sketch the architecture of this system. I propose one such sketch, necessarily very incomplete, as a means of initiating the design process.



I. Military Transarmament:

Before all else, something must be done with the weapons. We will not succeed in ridding ourselves of these outmoded artifacts until we have established a system that more convincingly assures our common security. In recent years, a new body of thinking has grown up around a concept that links the process of disarmament with the establishment of a variety of alternative means of what I call common or cooperative defense. Termed "transarmament," it entails a gradual transformation of the arsenals of all nations from weapons of attack to technologies and strategies (both military and non-military) that protect all sides from harm. I divide transarmament into two simultaneous processes:

Qualitative Disarmament: First introduced a half-century ago by Britain's Lord Robert Cecil at the Geneva Disarmament Conference of 1932-33, qualitative disarmament involves relinquishing all offensive weapons and leaving in place only those with a purely protective capability. The concept gained wide support at the conference, including from presidents Herbert Hoover and Franklin Roosevelt, but its enactment was ultimately thwarted by the emergence of Adolf Hitler and the decline of the League of Nations. In recent years, it has been revived by a number of theorists, including Randall Forsberg, author of the nuclear freeze proposal.[1]

Common Defense: While weapons of unilateral offense are being dismantled, a simultaneous process would be underway to deploy every conceivable variety of *mutually* protective defense system. Crisis control networks[2] linking the military commands of the superpowers to avert war by accident or miscommunication constitute one example of a common defense system. Another would be an international satellite monitoring agency (ISMA) to verify compliance with disarmament treaties and to provide an impartial source of information on weapons stockpiles.[3]

Such common defenses, which protect all sides from harm while threatening none, already exist in embryonic form and could easily be expanded. The technologies are wholly within reach and would come if engineers and, more importantly, the politicians who direct them, were assigned the task of protecting *all* sides from harm. The guiding concept would be to introduce the principles of nonviolence (or least possible harm) into the hardware of armed conflict.

The manifold strategies of nonviolent resistance, also known as "civilian-based defense" (CBD), constitute an entire second layer of common defenses.[4] By strengthening the will and skill of ordinary citizens to protect the institutions and values of their societies without the use of arms, CBD provides a line of defense not only after all armed resistance has been defeated but when military resistance is not even possible (against, for example, a domestic tyrant who controls all sources of military power, as occurred recently in the Philippines). While it has generally been proposed as a defense for individual nations or groups, CBD could equally well be adopted by many nations as a common defense, since it threatens no one while protecting all, and thus increases the stability of the entire global system.

A third general category of common defense is a

policy of detente, or "detente without illusions," as Richard Nixon termed it. Cultural exchange and scientific cooperation are both essential venues for a rapprochement between East and West. Some have suggested that large numbers of Russians and Americans, mostly students, swap countries for a year, becoming "guestages" of one another. Possibilities in the realm of scientific cooperation are vast. In addition to jointly building common defenses, East and West could profitably engage in numerous common ventures in space exploration.

II. Political Integration

With the advent of nuclear weapons at the end of World War II, many political thinkers considered world government inevitable, but almost no one now supports the idea. The well-founded fear that such a structure could become tyrannical has been used by some as a justification for a generalized aversion to all institutions of cooperative government. The international arena remains the most lawless jurisdiction on the face of the earth, a global Wild West, while at nearly all other levels of government we are suffocating beneath unduly restrictive rules and regulations.

The best — indeed, the only — way to avoid both the final shootout and the ultimate tyrant is to establish only that minimal degree of global organization required to handle problems that are irreducibly global in character and scale. We need to structure a global legal system that becomes essentially a headless leader, enforcing the law without also making it. It is essential that this independence from partisan political influence be maintained. A global court system would enable the considerable body of international law now on the books but openly defied to be applied and enforced.[5]

Here are several components that would seem most essential to this legal system:

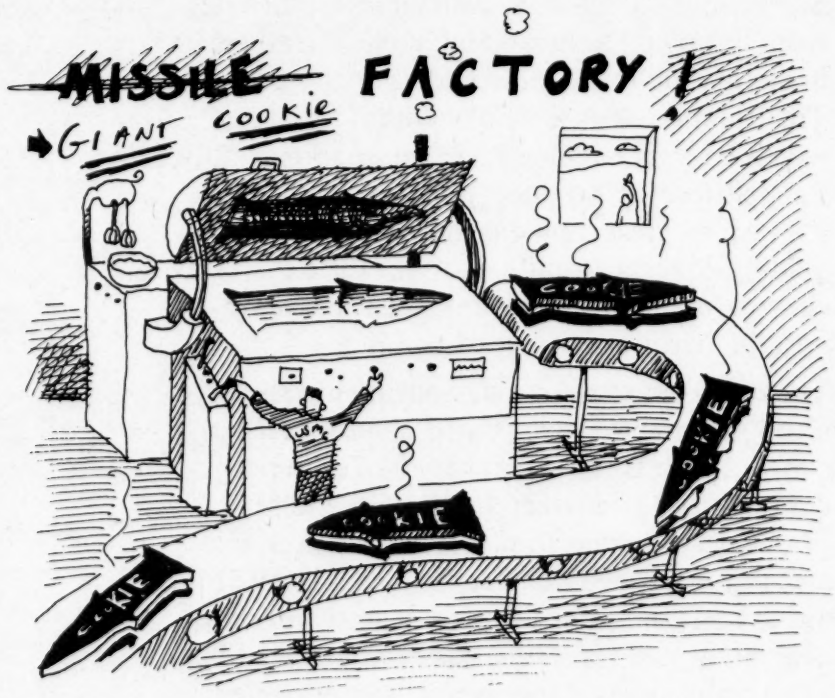
* a global disarmament administration, probably within the UN, to oversee the disarmament process. This administration would maintain a complete independent verification capability to monitor national stockpiles and check compliance with disarmament treaties;

* an arbitration machinery to deal with violations of the disarmament system, similar in structure to the U.S.-Soviet Joint Consultative Commission established by the SALT negotiations, but including all parties to the treaty;

* a reformed and strengthened United Nations. Many sensible plans for the reorganization of the institution have been drafted but resistance from the superpowers has always prevented their enactment;

* a permanent peacekeeping force, probably within the UN, recruited independently of national armed forces to assure its loyalty to the global body. Its officers would be trained in nonviolent techniques and furnished with the best technologies available to subdue and sedate conflict without harm to the combatants. Such a force would function much like domestic police in a democracy, intervening in conflicts only to the degree necessary to put an end to the violence, then taking the parties to court for a judgment;

* a system of collective sanctions against violations of international law. Ultimately, a comprehensive global court system is needed to negotiate the enormous variety of conflicts that would arise in so vast a jurisdiction.



III. Economic Conversion

With a comprehensive disarmament system in place, very large changes will occur in the economies of those nations now most deeply committed to military manufacturing. Enormous productive potential will be released, freeing up millions of scientists, engineers, and other workers from the aerospace, electronics, shipbuilding, and computer industries. To prevent massive un-

employment and other dislocations, the process must be carefully planned. The technological resources devoted to the manufacture of weaponry are more sophisticated than those of any other enterprise on earth, and the release of those resources could generate enormous opportunities for tackling more pressing human problems.

Conversion theorists urge that "alternative use committees" be established in each plant of the affected industries, where management, workers, and community members would together design alternative product lines and services for their company to offer.[6] Ten years ago in a significant precedent for such planning, shop stewards and technical workers at Lucas Aerospace in Great Britain initiated their own extensive study of alternative products for the corporation and produced a list of two hundred — all categorically rejected by management. Specific uses for the immense productive capacity released by disarmament would include:

1. modernizing the obsolescent infrastructure of civilian industries, particularly in those nations that have diverted vast resources to nonproductive weapons manufacture;
2. rebuilding the decaying centers of major cities, including housing, highways, sanitation systems, transportation, and health services;
3. reclaiming environments blighted by industrial activity, including a thorough and systematic clean-up of toxic waste sites;
4. encouraging innovation in every socially useful, marketable, and cost-effective product or service that does no harm and poses no threat — literally everything but weapons;
5. building balanced interdependence between national economies, taking care to avoid one-sided dependencies.

To gain the support of management, a conversion process must also assure a reasonable profit to its investors. Peace must be shown to benefit more people more of the time than a military economy. Certainly this will involve a redefinition of the term "reasonable profit."

IV. Cultural Adaptation

In addition to its various institutional components, a global peace system will necessarily include a nonmaterial dimension, a set of subtle but fundamental shifts in attitude and behavior to make it possible for irreconcilably different societies to coexist. These shifts of attitude need not be sweeping changes of consciousness. Everyone need not love one another for a peace system to function. If the system is well-designed, even the self-interested actions of competing states can be played off one another to positive effect, just as political parties in the parliaments of Western democracies conflict without cataclysm, maintaining a certain equilibrium, and cancelling the most extreme consequences of the struggle.

The most fundamental shift that needs to occur is not a comprehensive resolution of differences between East and West but a common agreement to accept both differences of temperament and a commonality of fates. The chief contestants in the global argument are like convicts chained together at the ankles, unable to gain freedom for themselves except by cooperating with one another. By their common effort to break the chain, they will forge the bond to one another that will free them all. I welcome the work of others in constructing this emerging design for a global peace system.

Please write with your comments and suggestions to Mark Sommer, Box 650, Miranda, CA 95553. You may also wish to contact ExPro, the Exploratory Project on the Conditions of Peace (519 McGuinn Hall, Boston College, Chestnut Hill, MA 02167), a group of leading peace theorists and activists who have come together specifically to design global peace systems. ■

Notes

1. Randall Forsberg, "Confining the Military to Defense as a Route to Disarmament." *World Policy* (Winter 1984). See also Dietrich Fischer, *Preventing War in the Nuclear Age.* Totowa, New Jersey: Rowman and Allanheld, 1984; and Johan Galtung, *There Are Alternatives: Four Roads to Peace and Security.* Nottingham, U.K.: Spokesman, 1984.

2. See William Ury, *Beyond the Hotline*. Boston: Houghton Mifflin, 1985 (reviewed in *WER* #47, p. 99).

3. See "Etiquette for the Age of Transparency." *Whole Earth Review* #50 (Spring 1986); also "The Implications of Establishing an International Satellite Monitoring Agency." Report of the Secretary General (Study Series 9). New York: United Nations, 1983; and Jerome Wiesner, "An International Arms Verification and Study Center" (unpublished, December 1985).

4. See Gene Sharp, *The Politics of Nonviolent Action.* Boston: Porter Sargent, 1973; *Social Power and Political Freedom.* Boston: Porter Sargent, 1980; *Making Europe Unconquerable.* Cambridge: Ballinger, 1985.

5. For an excellent layman's discussion of the necessity and potential of world law, see Benjamin Ferencz, *A Common Sense Guide to World Peace.* New York: Oceana Publications, 1985.

6. See Suzanne Gordon and Dave McFadden, *Economic Conversion: Revitalizing America.* Cambridge: Ballinger, 1984.

National Security Through Civilian-Based Defense

Waging war without weapons is not an entirely new concept. But the rich heritage and applicability of nonviolence to contemporary political conflict is only beginning to reach a popular audience.

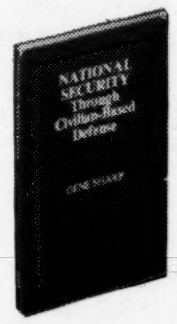
Harvard researcher Gene Sharp has written a brief introduction to the concept and practice of civilian-based defense (CBD) which he began exploring in extensive detail over ten years ago in his classic, three-volume study, the ***Politics of Nonviolent Action.***

A list of needed policy research accompanies a step-by-step description of how nonviolent defense would be carried out to repel an invader or crush an internal dictator.

Published by the Omaha-based Association For Transarmament Studies, this proposal aims to establish the concept of a civilian-based defense as a realistic option in the public debate about national security. In addition to chronicling the historical successes of nonviolent sanctions, Sharp critically examines the limits of CBD.

—Chet Tchozewski

National Security Through Civilian-Based Defense
Gene Sharp
1985; 93 pp.
$5.95 postpaid from:
Association for
Transarmament Studies
3636 Lafayette Avenue
Omaha, NE 68131



Making Europe Unconquerable

The vision is Ghandiesque: To build a peace that would protect itself against aggression, not by violence, but by coordinated massive uncooperation with the usurper. It's a vision as cranky, bold, and possible as any nonviolent revolution that has succeeded in the past.

—KK [Suggested by Mark Sommer]

Making Europe Unconquerable
Gene Sharp
1985; 250 pp.
$14.95
($16.45 postpaid) from:
Ballinger Publishing Co.
Harper & Row, Publishers
2350 Virginia Avenue
Hagerstown, MD 21740
or Whole Earth Access

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"Paralysis, rather than destruction, is the true aim in war, and the more far reaching in its effects."

—Sir Basil Liddell Hart (1935)

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Civilian-based defence does not attempt defence at the frontier, except occasional, largely symbolic, actions designed to communicate a will to resist. In civilian-based defence the invasion forces are allowed, as in an ambush, to enter the country in order to engage them in struggle at closer range in ways more likely to defeat them without the massive casualties and destruction of military warfare.

Civilian-based defence is the direct defence of society as such — its principles, free institutions, and liberties — rather than a futile attempt to defend territory as an indirect means to defend the society.

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The aim is to become able to deny attackers their objectives, to become politically unrulable by would-be tyrants, and to subvert the attackers' troops and functionaries to unreliability and even mutiny. Such a prepared capacity, accurately perceived, would provide a different type of deterrent: facing such defense capacity, rational would-be aggressors would choose to stay away!

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One hundred ninety-eight specific methods of nonviolent action have been identified. These methods are classified under three broad categories: protest and persuasion, noncooperation, and intervention. Methods of nonviolent protest and persuasion are largely symbolic demonstrations, including parades, marches and vigils (54 methods). Noncooperation is divided into three sub-categories: a) social noncooperation (16 methods), b) economic noncooperation, including boycotts (26 methods) and strikes (23 methods), and c) acts of political noncooperation (38 methods). "Nonviolent intervention," by psychological, physical, social, economic, or political means, includes 41 methods (such as the fast, nonviolent occupation, and parallel government).

The use of a considerable number of these methods — carefully chosen, on a large scale, persistently, with wise strategy and tactics, by trained civilians — is likely to cause any illegitimate regime severe problems.

Nonviolent action resembles military war much more than it does negotiation; it is a technique of struggle.

Unilateral Nuclear Disarmament Measures

Virtually all advances in the nuclear arms race have been the result of unilateral actions taken by an individual nation. Efforts to restrain or reverse the arms race have had limited success because they have almost always stressed bilateral or multilateral actions.

This concise (24 pages), readable (as U.N. documents go) report of the U.N. secretary-general examines the conceptual framework that makes unilateral disarmament initiatives among the most promising methods of limiting the threat of nuclear war. Reviewing successful unilateral actions of the past 40 years, the study points out the importance of unilateral confidence-building measures to overcome the gridlock of mistrust that obstructs progress in bilateral arms control.

The recent unilateral Soviet moratorium on underground nuclear warhead tests challenges the other nuclear powers to exercise reciprocal restraint much the same as the 1958 Soviet suspension of atmospheric tests which eventually led to the 1963 Atmospheric Test Ban Treaty.

—Chet Tchozewski

Unilateral Nuclear Disarmament Measures
United Nations
Publication No. E.85.IX.2
1985; 24 pp.
$5.00 postpaid from:
Department of
Disarmament Affairs
United Nations
New York, NY 10017

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Mutual trust is not a prerequisite for unilateral initiatives. On the contrary, it can be developed as a result of unilateral actions.

Environment and Conflict

The environmental consequences of war are well known. The recent studies of the atmospheric impact of nuclear explosions have reinforced the notion that nuclear winter may make the continuation of life on earth questionable.

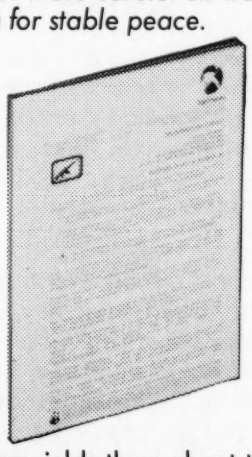
But alarmingly little is understood about the contribution of ecological decay to political violence. ***Environment and Conflict*** *carefully examines the relationship of environmental bankruptcy and human bloodshed.*

This Earthscan briefing document, written by Lloyd Timberlake and Jon Tinker, discusses a few key areas of political instability where the dispute is rooted in ecological decline. Among the specific problems are soil erosion, refugees, rural unrest, city food riots, transnational rivers, and fishing disputes.

Environment and Conflict *does not claim that all or even most wars are caused exclusively by environmental degradation, but it appeals for more careful environmental planning as a precondition for stable peace.*

—Chet Tchozewski

Environment and Conflict
Lloyd Timberlake
and Jon Tinker
1984; 83 pp.
$5.00 postpaid from:
Earthscan
1717 Massachusetts
Avenue NW
Washington, D.C. 20036



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Soil erosion is lowering crop yields throughout the Third World. In key areas of tension between the superpowers — Central America, the Horn of Africa, Iran and Afghanistan — political instability is closely associated with an eroded agricultural base. A 1982 draft report to USAID said that in El Salvador "the fundamental causes of the present conflict are as much environmental as political." In Central America, loss of livelihood through erosion and deforestation creates a desperate peasantry ripe for conversion to guerrilla movements.

Poland's Solidarity movement had some of its roots in the rapid soil, water and forest deterioration which resulted from mistakes in centralised agricultural planning. A major underlying cause of the 1974 Ethiopian coup was massive topsoil erosion. The coup affected superpower relations, with the USSR and USA exchanging Ethiopia and Somalia as client states.

Afghanistan's 1973 coup was linked to a similar pattern of environmental degradation, and resulted in the 1979 Soviet invasion. Iran is another former US client state in which the regime's neglect of agriculture contributed to its downfall.

Third World environmental refugees are increasingly fleeing worn out lands for the industrialised countries of the North. The number from Mexico alone is estimated at 1,000 per day.

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A former US State Department official remarked:

"If a foreign power seized several hundred square kilometres of Sudanese territory, the government would not hesitate to call out the army. Yet every year hundreds of square kilometres of valuable land are irrevocably lost to that nation through bad land management, and the government accepts it meekly."

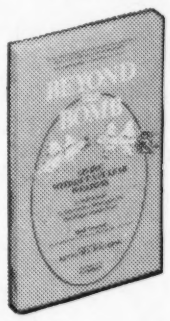
Few governments use their military against desertification and soil erosion, but many of them rely on military solutions to the vicious cycle of rural neglect and inequitable landholding policies, followed by land degradation, followed by guerrilla uprisings.

Beyond the Bomb

This is a detailed road map for traversing the new territory beyond nuclear deterrence. The unusual thing about it is its common sense. Author Mark Sommer (see previous article) examines ten of the most promising routes to the abolition of nuclear weapons: 1) alternative defense, 2) alternative security, 3) world order, 4) disarmament, 5) nonviolence, 6) peace research, 7) alternative futurism, 8) economic conversion, 9) negotiation, and 10) game theory. This wonderful survey is a thorough and stimulating account of practical strategies for waging peace.

—Chet Tchozewski

Beyond the Bomb
Mark Sommer
1985; 180 pp.
$7.95
$9.45 postpaid) from:
Expro Press
The Talman Company
150 Fifth Avenue
New York, NY 10011
or Whole Earth Access



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Advances in information technology — sensors, communication and processing — have created a rudimentary planetary nervous system, fragments of a planetary cybernetic. . . . This transparency revolution means that the traditional struggle between offensive and defensive military force has been transformed into a competition between the visible and the hidden — between transparency and stealth. . . . Planetary-scale information systems bring the strategic competition between the superpowers to its least stable and most dangerous state. At the same time these systems make planetary-scale security possible for the first time in human history. Within the planetary war machine at its most advanced, unstable state may lie the embryo of a new security order.

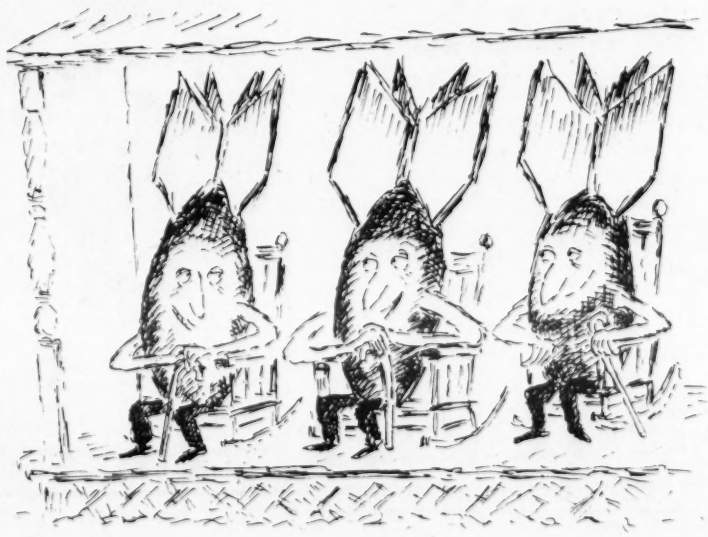
—Daniel Dendney

•

Kenneth Boulding and other have observed that at this moment in the social evolution of the species, we are in a "strange limbo" in which war has largely lost its legitimacy but peace has not yet established its own as a replacement.

•

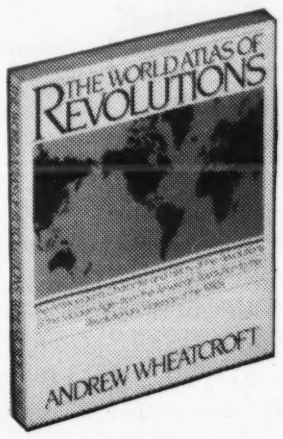
Peace researcher Dietrich Fischer extrapolates several lessons from the success of Tit for Tat to apply to an alternative security policy: 1. Never initiate conflict; 2. Don't passively accept negative behavior but respond immediately; 3. Don't retaliate excessively. Having made your point, return immediately to a cooperative stance. Don't escalate the conflict or lock yourself into a negative syndrome. 4. Let your strategy be simple and transparent, so that your adversary can learn to rely on your responses and act accordingly.



The World Atlas of Revolutions

Revolutions are the hammers breaking the concrete of old institutions and power, and any student of social change finds their study rewarding. Here's a book full of revolutions, beginning with Lexington and Concord and going through Iran and Afghanistan. Three dozen uprisings that either toppled old political and economic systems or made serious attempts are analyzed in capsule form. From the Bastille to Vietnam and Nicaragua, the atlas provides a quick tour of two centuries of resistance and rebellion.

In addition, there are maps galore, perhaps even too many, for the text is more interesting. Since many of the revolutions were based on the thinking of Marx, it's unfortunate the author fails to consider that perspective. At least we're given the raw material, and from that we can do our own theorizing. —*Dick Fugett*



The World Atlas of Revolutions
Andrew Wheatcroft
1983; 208 pp.
$10.95
($12.45 postpaid) from:
Simon & Schuster
200 Old Tappan Rd.
Old Tappan, NJ 07675
or Whole Earth Access

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Hitler, a man given to bold strokes, had correctly surmised that the mechanisms of power in Germany could only be taken with the sanction of lawful authority: the German political system was entrenched in notions of legality. But he also realized that the most potent weapon to brandish at his opponents was the threat of anarchy, of controlled violence and disorder. By this means he became the intermediary between the forces of disorder (which he himself had created) and the established authority of the state. The legal fiction was that he had achieved power through the ballot box, and to a degree this was true.

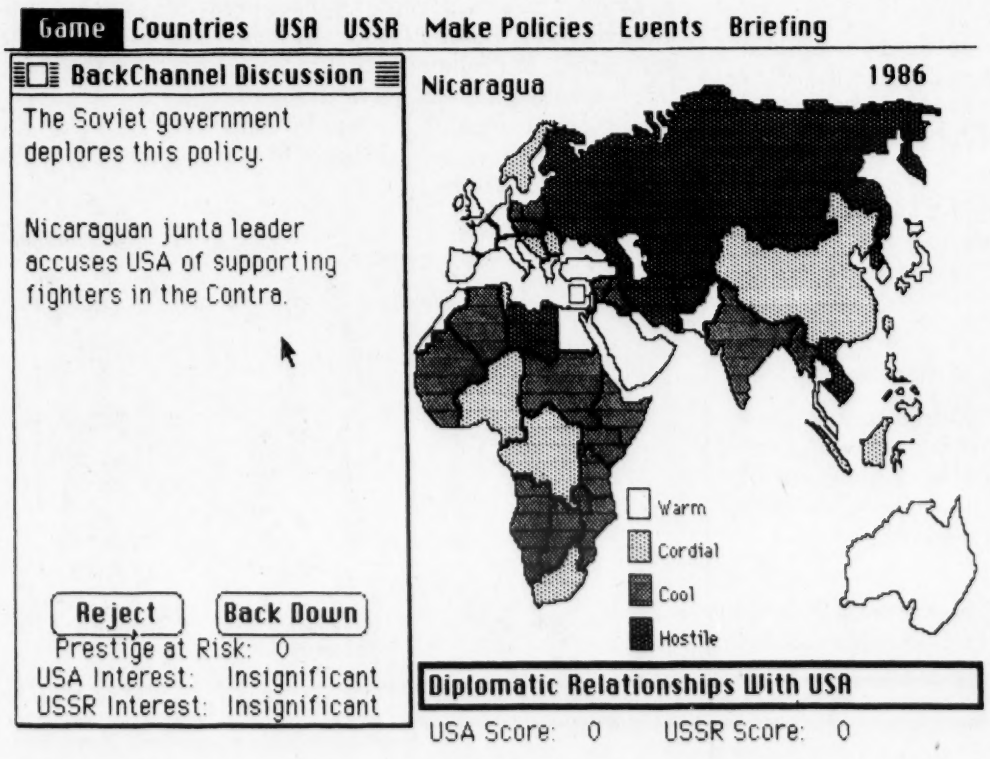
•

Superficially, the course of the war in Cyprus seems routine. There were relatively few casualties and the guerrilla movement was feeble by comparison with the contemporary movements in Vietnam or Algeria. The significance of Cyprus was that it showed, almost for the first time, that wars could be waged, not for ground, but for public opinion and the political will of an opponent. Britain's interest in Cyprus was practical, not emotional.

◄ War in the desert: on campaign against the Turks in eastern Arabia, 1911.

Balance of Power

The most lingering lesson I took from this computer simulation of the Cold War is a sense of the pace of diplomacy. It's slow. Tense. Sobering. You agonize before every move — will I blow up the world? You balance contradictory facts, dissect every piece of information, acclimatize yourself to a world bounded by paranoia and suspicion. Balance of Power is the opposite of a shoot-'em-up; it puts you in a world where every small decision has enormous consequences, consequences you won't even see emerge for several moves down the road.
—*Art Kleiner*

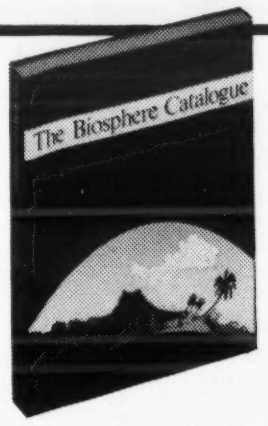


Balance of Power
Copy-protected.
Macintosh (IBM in June).
$49.45
($54.45 postpaid) from:
Menu International
1520 South College Avenue
Fort Collins, CO 80524

The Biosphere Catalogue

A dashing first attempt to picture the Earth as it is in both our knowledge of planet workings and the dreams of the human species. An excellent guide to tours, criss-crossing the planet, and thumb-nail sketches of cities, biomes, plants, soil, animals, evolution and the first attempts to delineate how to transport the biosphere to Mars. It is all written by people (like Lynn Margulis, Norman Myers, and Gordon Orians), who have spent intimate time with their earthbound research.

There are a few glaring gaps: No discussion of freshwater nor gene splicing nor biogeochemical cycles nor the vast universe of insects. But the free-wheeling, adventurous intellect is obvious; the fun of trying to grasp all-of-IT-at-once makes ***The Biosphere Catalogue*** *special. You can easily get lost browsing and ruminating among the bookish leaves.* —*Peter Warshall*



The Biosphere Catalogue
Tango Parrish Snyder, Editor
1985; 240 pp.
$12.95
from:
Synergetic Press
312 Houston Street
Ft. Worth, TX 76102
or Whole Earth Access

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In a deep way our economists must be shown that even the most industrious amongst us are never productive: only the photosynthesizers can harvest the sun. Perhaps, with the strategies outlined here by the Institute of Ecotechnics we can go beyond the *domestication* of animals and plants (by "bringing them into the house") and develop *ecopoiesy* —the making of volumes and even stark planets like Mars habitable (Haynes, 1985). We must bring entire communities of organisms "into the house." No matter the details of our ecopoietic actions, no matter their level of consciousness, we must make up our real deficit and repay our debt to the biosphere by studying it. Otherwise it may foreclose on us.

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Moreover, we can speculate that if, say, Central America were to bulge out along the Tropic of Cancer, instead of almost dwindling away, we would encounter another vast desert corresponding to the Sahara. Similarly if Africa were to extend further along the equator, as does Amazonia, we would find a huge rainforest.

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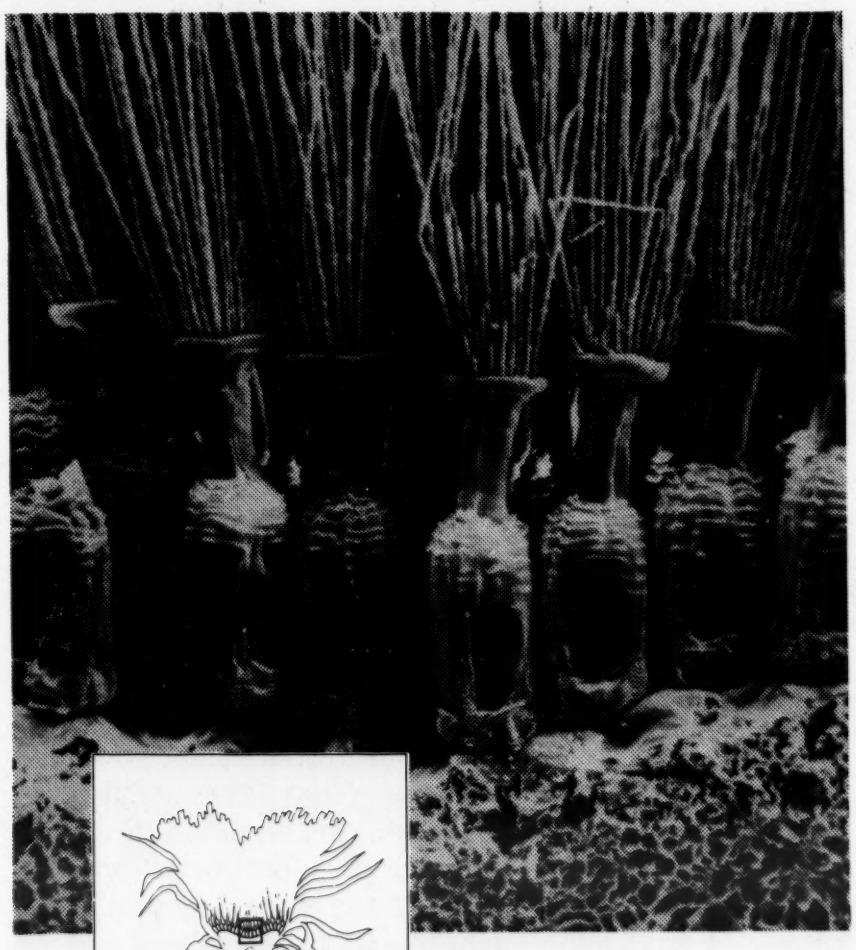
Life Extension in Space Traveling Biospheres
Abundant animal studies since 1935 have shown that caloric restriction, to 90% to 50-60% of ad libitum intake, and provided that the food actually consumed is of high nutritional value (hence the catchphrase, "undernutrition without malnutrition"), will extend maximum life span of rodents and other species by 20 to 80% (Walford, 1983). There is reason to believe that with a high order of probability the method would work in humans; beginning with restriction in early childhood, this would mean at the outside a maximum life span of 180-190 years.

Life extension by caloric restriction does not add old years onto old, but extends the period of youth and middle age, and, of additional importance for space colonization, the period of fertility. However, a life span of 180 years refers to the last survivor, the tail of the curve, not a working population. From a practical standpoint, the extension of useful working life possible by caloric restriction would be 20 to possibly 40 years.

Scanning Nature

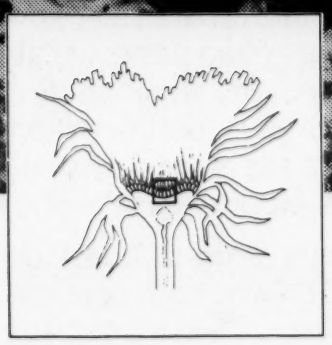
Stunning images from the scanning electron microscope are nothing new. What's new here is the range of subjects and the clear explanations of the functions of the forms. The whole of the natural world, from humankind to minerals, is drawn on for a collection of beautiful images that gives new insight into our world at the microscopic level.

It really is a beautiful book, very well printed on glossy paper, and reasonably priced. —*David Williams*
[Suggested by H. W. Mathews]



Vertical section of an unripe fruiting head of Dandelion ►

The flower head of a dandelion, *Taraxacum officinale*, as in other composite flowers, consists of a large number of separate flowers or florets arranged on a flat-topped receptacle. Each floret produces a bottle-shaped, single-seeded fruit or achene, topped by a tuft of hairs, the pappus. When the fruit is ripe the pappus beak grows to form a parachute that allows the wind to carry the fruit and the ripe seed inside away from the parent plant.



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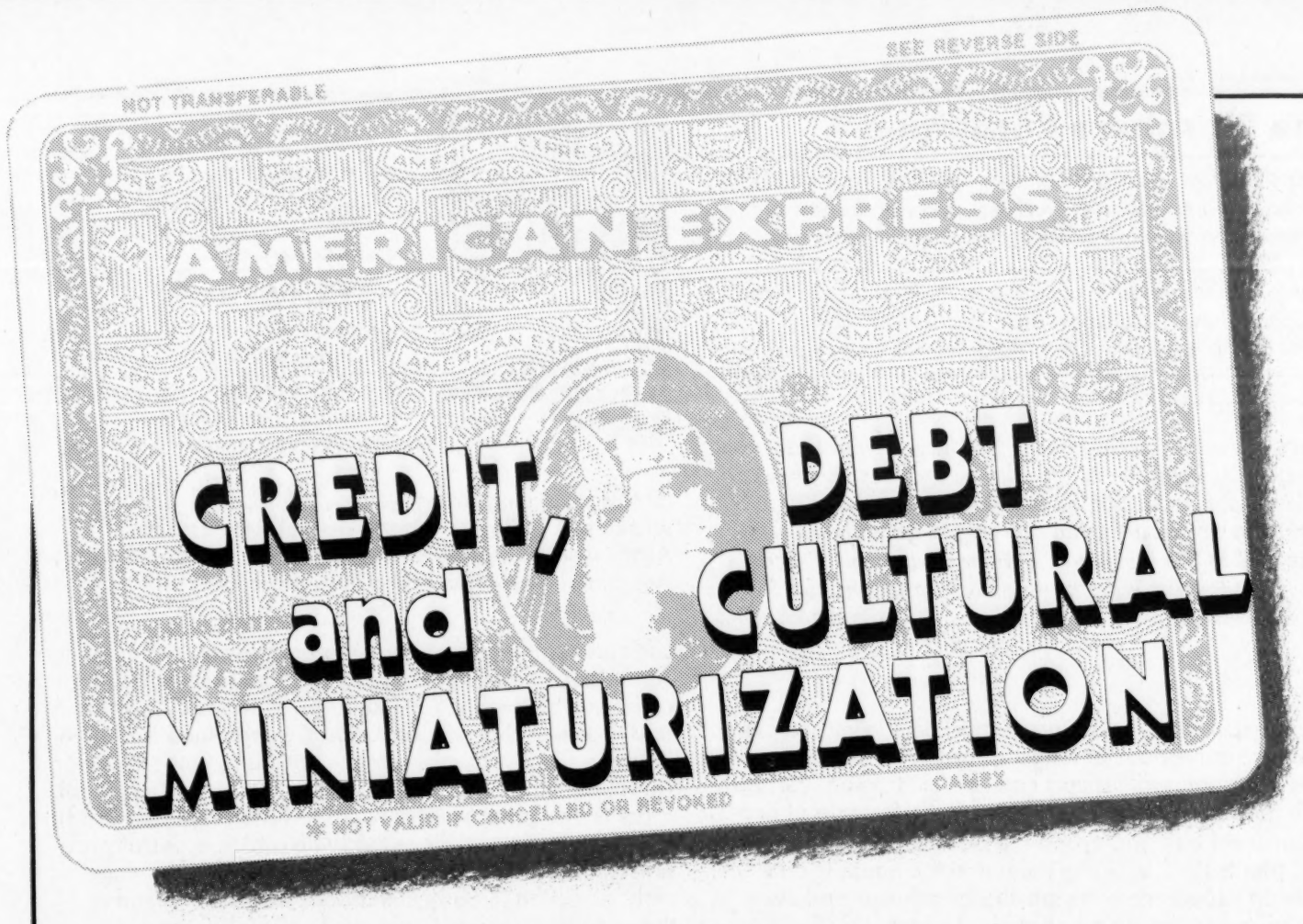

Interview with Paul Hawken

In my incarnation as a local newspaper journalist (for the San Francisco Bay Guardian), I recently embarked on a story about people who had run up large credit card bills — what happens to them? What do the massive amounts of consumer debt mean in the big picture? I remembered that* Whole Earth's *economic advisor Paul Hawken had predicted a credit collapse several years ago:

"The demand and growth of debt has far exceeded the growth of the economy overall . . . . For our present debt burden to not exceed manageable levels, we would have to grow at least 4 to 5 percent per year in real terms, a rate that is only consistently achieved by one developed country, Japan . . . . The only ways interest rates can go down are through either deflation (read economic collapse) or inflation and hyper-inflation (read delayed economic collapse). . . . (CQ #34, p. 62).

I cornered Paul in a coffee shop one morning to ask a simple question: "What happened to the credit collapse?" The resulting conversation follows. As much as information flow, debt is a metaphor that illuminates every aspect of our economic lives — personal and political. ***—Art Kleiner***

Art Kleiner: Is there still a threat of an imminent credit collapse?

Paul Hawken: To a certain degree, we've already had credit collapses all over the country. Go to the Monongahela Valley in the Allegheny Mountains west of Pennsylvania — they've already had their credit collapse. There're lots of places in the country that are already having it. In Houston. In certain farm states right now, land prices are going down. Crop prices are also going down. Deflation. So, although there isn't national deflation, there is local deflation. The value of the land and the crops they sold to service their debt have both gone down.

Do you remember how wonderful inflation was? You obtain a $100,000 mortgage and you pay interest on the loan. Then a number of years later because of 12 percent inflation your debt becomes only $50,000 in *real* terms (constant dollars) and your house increases in value from $100,000 to $200,000 in current dollars. Well, shoot, your debt's gone down even though you've only been paying the interest. You haven't touched the principal. Yet you've made $100,000, and your debt's been reduced. No wonder people liked inflation.

Well, a credit collapse is the opposite. You borrow $100,000 and after the same number of years, your house is only worth, say, $80,000. And your debt in constant dollars is $120,000. That's tough. Your house's net value has been reduced substantially, and the monthly demands on your cash flow have increased. So you have less money to spend on things that cause

economic growth. You're just servicing debt.

The value of land makes a difference in terms of borrowing. If the value of your land goes down and you've borrowed 60 percent against it, then the banker looks at it and says, "Hey, you're borrowing 100 percent from us now because your land's gone down 40 percent in value. I'm going to have to call in 20 percent of that loan to get my ratios back."

So your working capital is shrinking while your income is shrinking and the value of your only asset is going down. That's tough.

The point is, a credit collapse is going on. It's kind of a rolling one — to different sectors of the country and to different industries. The question is how we could have had a six-year period of deflation in the primary economy — farm goods, timber, copper, silver, gold, aluminum, iron — without it pulling down the whole bloody house of cards.

The only one I've seen, besides myself, who's speculating as to why, is Peter Drucker. I said in *The Next Economy (CQ* #37, p. 135) the various economies have severed or separated. The mass economy is contracting while the informative economy is expanding. My terminology may have been awkward there. In traditional parlance you'd say that there was delinkage. That means that we can have in the same country at the same time de facto deflation, credit collapse, recession as well as recovery and inflation. Not everybody experiences the same economy in the same place in the same way at the same time. That's a concept that no one's talking about really.

AK: Does that relate to multinational corporations being beyond international boundaries, so that you're not a citizen of your community so much as a citizen of the industry you work for or among?

PH: I would put it a little bit differently. It's not so much the presence of multinationals as it is the lack of nationals. A purely American economy can be measured but it doesn't exist except conceptually. In the last 20 years, world trade has expanded at a much, much greater rate than economic growth as a whole. Therefore, economic interdependence has expanded to a degree that I think would catch most people by surprise. This holds true not just in the exchange of goods but also for services and other more intangible types of economic intercourse — such as debt, the eurodollar markets, and stocks and bonds. Because the world economy has become so interlinked there is a concomitant importance in the local, regional economy. That's a major difference between now and the period before the Wall Street crash of 1929. At that time, national economies were much more isolated from each other. There was trade, but it did not transcend the real monetary, cultural, and production boundaries between nations. You had the collapsing Weimar Republic next to a country like France that did not have a collapse.

That would be impossible today, partly because of the floating rate system of currency. You can't have the central bank in West Germany let the currency printing presses loose without a severe impact on the Germans themselves. They would immediately become economic pariahs — industry would suffer, there would be harsh unemployment — and the German people would have to stop it or overthrow the political system whether they wanted to or not.

Who's in charge of the value of the Deutschemark right now? Or the dollar or the yen? It's very difficult to say. But what is easy to say is that they're highly linked together. And becoming more linked.

AK: What, then, are the prerequisites for a credit collapse?

PH: One prerequisite for the possibility of a credit collapse is that the growth of debt over a protracted period of time far outpaces both the rate of inflation and the rate of real economic growth. That certainly has been the case for the last 15 or 16 years. Debt isn't just growing faster, it's growing considerably faster. The money is borrowed for the wrong reasons, or it goes into the wrong things. It's one thing to borrow to build productive assets, to build infrastructure, to build highways. It's another thing if you borrow money and you spend it on things you don't need.

I see three main areas where we have borrowed without need. One is corporate borrowing. We have tremendous overcapacity in our whole system. We have a capacity to produce more steel, more electricity, more minerals, more cars, and more aluminum than we can use — a glut that is almost universal. Oftentimes inflation, or war, artificially pumps up demand. People draw a straight-line projection on a graph and say, "Gosh, if demand is like this today, it's gonna be up here in five or ten years. We'd better start cranking up for more capacity." So they borrow just at the time when demand has peaked. That happened both with personal computers and with the energy business in this country.

The second arena of the economy which overborrows is government. The government has borrowed much too much money and has dipped heavily into the private sector to finance an expansionary military build-up. Fattening up a military is really a poor excuse for understanding and negotiation. In other words, instead

of using our mouths, we've used money. Instead of using our minds, we've used metal and military — and it's very, very expensive. Putting aside the moral issue entirely, we can simply say that a very serious mistake has been make from a fiscal point of view.

Thirdly there is individual borrowing. Inflation, which usually precedes a credit collapse, confuses people by sending the wrong economic signals. People who hold money go and buy assets. They buy a house, or other kinds of

tangible, durable assets. Buying tends to be a better idea than having the cash, so savers are punished and borrowers are rewarded in an inflationary period, especially during the seventies, when interest rates were lower than the rate of inflation for two or three years.

AK: Does a lot of individual credit card borrowing particularly exacerbate the threat of a credit collapse or does it not make much difference?

PH: No, not much. The difference between credit card borrowing and other types of borrowing is that credit card payment schedules are flexible. So, despite the excesses, it's more controllable. There are actually more checks and balances with credit card borrowing than there are with government borrowing.

For example, there are limits on the cards — how many you can have, how much you can spend. Banks and other credit companies like TRW can check to see how many cards you've got. It's a very interconnected system. If we had such a system of redundancy and checks and balances in other financial areas, we wouldn't have problems like Third World deficits.

Credit cards are part of the miniaturization we see going on now. If there's a technological idiom suffusing the economy, it's a sense that products, processes, and services that were formerly done on a certain scale are now being done on a smaller scale. But along with that comes kind of a cultural miniaturization.

One way you can look at credit cards is to view every person with one as if they were a corporation with a credit line. People didn't even know what a credit line was 15 years ago. I'd bet if you walked the streets then and asked "What's a credit line?" 90 percent of the people wouldn't have known.

AK: What is a credit line?

PH: To a bank it means you have so much credit and they are willing to lend you up to that amount. Agreed upon in advance are what the terms are — the interest rates, the payment rates, and whether it's secured or not.

The difference between a credit line and a loan is that a credit line expands and contracts. For a loan you sign a note — principal is due, interest is due — it's a fixed entity. You pay it all back. A credit line just rises and falls.

My corporation has a credit line. But now everybody gets one. Banks and stockbrokers are saying, "You got a house? We'll give you an instant credit line of $25,000 secured against your second mortgage." In other words, it's a second mortgage with expanding and contracting credit abilities.

When everybody has a credit line, each person becomes like a little corporation. People are going to buy and sell securities; they're going to have a balance sheet. If you look at the personal finance literature that's coming out, you'll see it all approximates or imitates business-type parlance.

USA Today asked me an interesting question the other day. They asked, "If you were going into business today, what business would you go into?"I thought about it for a couple of

days and then I called back. I said I'd go into banking.

AK: Why banking?

PH: First of all, I always go into a business that I want to be the customer of. Secondly, I always go into a business where I'm currently dissatisfied as a customer.

Any time conventional wisdom says there will be tremendous centralization of an industry, it's time to go into it because it's not going to happen that way. The best examples recently are baking and beer. Everybody in the sixties and seventies said there would soon be only three national bakeries dominating the business, one of them being ITT. The prediction was that all bread in bakery outlets and supermarkets would be made by these huge companies.

Well, thousands of bakeries have started since then. There must be a hundred cookie companies. What happened was the opposite, an explosion of on-site bakeries.

They said the same sort of thing about breweries. There would be three brewers. One of them would be Schlitz, one would be Anheuser-Busch, and the third would *not* be Miller. There was a process of conglomeration, but estimates now are that there will be a thousand micro-breweries in this country by 1990.

I say the same thing will happen with financial services. The conventional wisdom is that huge enterprises like American Express, Shearson, Lehman, Bache, Sears, and Dean Witter will be the only way you can compete in the financial supermarket. But the problem with all this is that somebody got left out — the customer. The customer is confused, he isn't getting good service, and he doesn't have continuity of personnel relating to him. He feels treated like a number and not a person. So I would go into banking. I would start a small local bank to take care of people. ■

Filters Against Folly

Seventeen years ago, Garrett Hardin published a deadly essay titled "The Tragedy of the Commons." In it, he showed irrefutably that individual citizens attempting to better their lot by adding one more sheep to the commonly owned pasture would inevitably bring ruin to all. This concept opposed the view held by many economists that the sum of individual strivings for advancement will benefit society as a whole. Hardin has aroused further controversy by advising that the U.S. not send aid to countries with rapidly expanding populations, claiming that such aid only brings worse problems later. "We Are The World" isn't necessarily a good idea.

This book further elucidates the idea of "commons" — it's easy to conceive of many that have little to do with sheep. More important, Hardin offers us a lesson in critical thinking so that we may be better able to avert lurking ecological catastrophe. He suggests that we subject incoming information from all sources — friend and foe — to three filters: Literacy — what's really being said; Numeracy — insisting upon quantification and careful interpretation of numbers; and Ecolacy — examining the long-run complex effects of our actions. Even though I've been analyzing information in this way for some time now (I base a college course I teach on Hardin's ideas), seeing the concepts put so clearly and accessibly is most helpful in cutting the crap. You may find likewise.

—J. Baldwin

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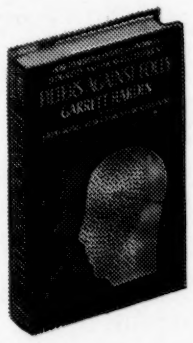
The Marxist system is critically sensitive to scale. Hutterites found this out long ago when they noticed that as their community grew in size, the relative numbers of goldbricks increased. Workers found excuses for going into town "to get a part for the tractor" or whatnot, lingering for a long time before returning. What were at first the actions of a few became the actions of many, as some of the hardest workers decided they were unwilling to carry the burden of the whole community. Altruism diminished as envy and resentment took over. Instead of working, people argued about working. Exercised abilities declined; expressed needs increased.

The answer, the Hutterites found, lay in controlling the scale. As long as the community was less than some apparently critical number (about 100 to 150), the Marxist distribution system worked. Above that not precisely defined number the system failed, and failed ever more badly as the number increased. So the Hutterites adopted a development program that plans for the automatic splitting of a community into two as soon as its numbers have doubled. One farming community becomes two, two become four, and so on, at intervals of about fifteen years. So long as abilities and needs are determined within a really small community, commonism works.



Filters Against Folly
Garrett Hardin
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East Rutherford,
NJ 07073
or Whole Earth Access

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A society of "bottom-liners," wholly oriented to the present, cannot justify the support of pure research. Then where can this support come from?

Since few industrial concerns can afford such philanthropy, most of the support has to come from the nation as a whole. The time between investment and payoff is so long, and the connection between the two so tenuous, there is little chance of economically tying one to the other. . . . This means that pure research presents us with a new distribution system: Privatized Costs and Commonized Profits — with the commons extending over the whole world . . .

Those who dream of One World, a world of commonized wealth, should know that, with respect to information, such a world is already in being. Though friction in the distribution system (e.g., patents, copyrights, and censorship) can delay the commonization of new information for awhile, in the long run information is passed around among all those who are capable of absorbing it, whether their intentions toward the rest of the world are benign or malign.

DECOMMISSIONING:

by Cynthia Pollock

DECOMMISSIONING — THE PROCESS OF CLEANING UP AND BURYING a retired nuclear plant in order to protect the public from radioactivity — is an essential step in the use of nuclear power.

In most industries, the disposal of retired plant and equipment is a straightforward and relatively low cost operation. But the high levels of radiation present in shutdown reactors makes the procedure uniquely complex and costly. Decommissioning requires remotely controlled technologies and large work crews to limit the exposure of individuals to radiation. Comprehensive strategies for transporting and disposing of radioactive wastes, and large amounts of readily available money, are also needed. Yet nearly four decades and 400 power plants into the nuclear age, the question of how to safely and economically dispose of nuclear reactors and their wastes is still largely unanswered.

Although nuclear power supplied 13 percent of the world's electricity in 1984, not a single large commercial unit has ever been dismantled. Nuclear engineers have been attracted to the exciting challenge of developing and improving a new technology, not to figuring out how to manage its rubbish. But the problem will demand attention as a growing number of plants approach retirement age. Not one of the 26 countries currently relying on nuclear power is adequately prepared for this undertaking.

The formidable issue of decommissioning is getting less attention than it deserves. Utility companies and ratepayers balk at yet another large expense associated with using nuclear power. And politicians are reluctant to tackle an issue that will not come to the forefront until after their political careers have ended. In many parts of the world, the nuclear power industry is strapped for cash and no longer commands the attention of scientists, business leaders, or policymakers.

DECONTAMINATION AND DISMANTLEMENT

Following a nuclear power plant's closure, the reactor owner must decide which of three courses to follow: 1) to decontaminate and dismantle the facility immediately after shutdown, 2) to "mothball" or put it in storage for several decades to undergo radioactive decay prior to dismantlement, or 3) to simply erect a "permanent" tomb. Each option involves removing the spent fuel, draining all liquids, and flushing the pipes.

Under the immediate dismantlement scenario, tubing and structural surfaces would be mechanically and chemically cleaned, a process called decontamination; irradiated steel and concrete would be disassembled using advanced scoring and cutting techniques; and all radioactive debris would be shipped to a burial ground. The site would then theoretically be available for unrestricted use.

Plants to be mothballed, on the other hand, would only undergo preliminary cleanup before being placed under surveillance. After 50 years in storage, most of the short-lived radioisotopes would have decayed, further safety gains would be negligible, and the facility would be dismantled.

Entombment, the third option, entails covering the reactor with reinforced concrete and erecting

When a nuclear power plant gets old, it must be safely put to bed for a very long and radioactive sleep. How this is done, where it happens, and what it might cost are questions this article considers. Cynthia Pollock is a staff researcher for the (14-person) Worldwatch Institute, which specializes in raising the kinds of global environmental issues that politicians by their very natures have a tough time grappling with. Worldwatch issues five to six papers each year and also publishes an annual book called State of the World. *A calendar-year subscription to* Worldwatch Papers *is $25;* State of the World 1986 *is $8.95, and the longer annotated version of this article is available individually for $4.00 postpaid. All from Worldwatch Institute, 1776 Massachusetts Ave., N.W., Washington, D.C. 20036.* —*Richard Nilsen*

Nuclear Power's Missing Link

U. S. Department of Energy

The first commercial nuclear reactor to be decommissioned in the United States lies buried in the ground inside the large building at Shippingport, Pennsylvania. The Ohio River flows in the background. Final resting place for the 770 ton reactor vessel will be in the state of Washington, after a trip through the Panama Canal.

barriers to keep out intruders. Although once viewed as the cheap and easy way out, entombment is no longer considered a realistic option because of the longevity of several radioisotopes. The protective structure would decay long before the radioactivity.

For the first several decades following plant shutdown, the most problematic elements are those radioisotopes that decay the fastest. Cobalt and cesium are the dominant short-lived radioisotopes with half-lives of 5 and 30 years, respectively. Other elements with longer half-lives (the time it takes radioisotopes to lose half their radioactivity) are present in smaller quantities and will dominate radiation levels in the future. Neutron-activated materials contain significant amounts of long-lived nickel and niobium radioisotopes. Nickel 59, for example, has a half-life of 80,000 years.

Following preliminary decontamination, the structures surrounding the reactor must be cut into smaller pieces for transportation and burial. A steel pressure vessel containing a 1,000-megawatt reactor is typically over 12 meters high and 4 meters in diameter. The concrete vessel surrounding an advanced gas reactor, the type used in the United Kingdom, is several meters thick. Dismantling the vessels is both complicated and hazardous. Each cut causes more airborne contamination, so remote-controlled equipment will probably be used to keep dust formation and worker exposure to a minimum. Although testing of several dismantling techniques is underway, more research is

required to prepare the industry for dismantling today's large reactors.

Twenty-five miles outside of Pittsburgh, Pennsylvania, the U. S. Department of Energy is currently decommissioning the United States' first commercial reactor. The 72-megawatt Shippingport plant began producing electricity in 1957 and was closed in 1982 after 25 years of operation. In accordance with the original contract, the U.S. government is responsible for decommissioning the plant. Shippingport will be the largest unit decommissioned to date anywhere in the world, and the decommissioning process could be used as a valuable and badly needed prototype.

Instead of seizing this learning opportunity, DOE plans to encase the 10-meter-high steel reactor vessel in concrete, transfer the 770-ton behemoth intact to a 4,000-ton barge, then send it down the Ohio and Mississippi rivers, through the Gulf of Mexico and the Panama Canal, and up the Pacific Coast and Columbia River. It is to be buried in an earthen trench on the government-run Hanford nuclear reservation. Keeping the Shippingport reactor pressure vessel in one piece instead of chopping it up and sending it by truck is estimated to lop at least $7 million, or 7 percent, off the total price tag.

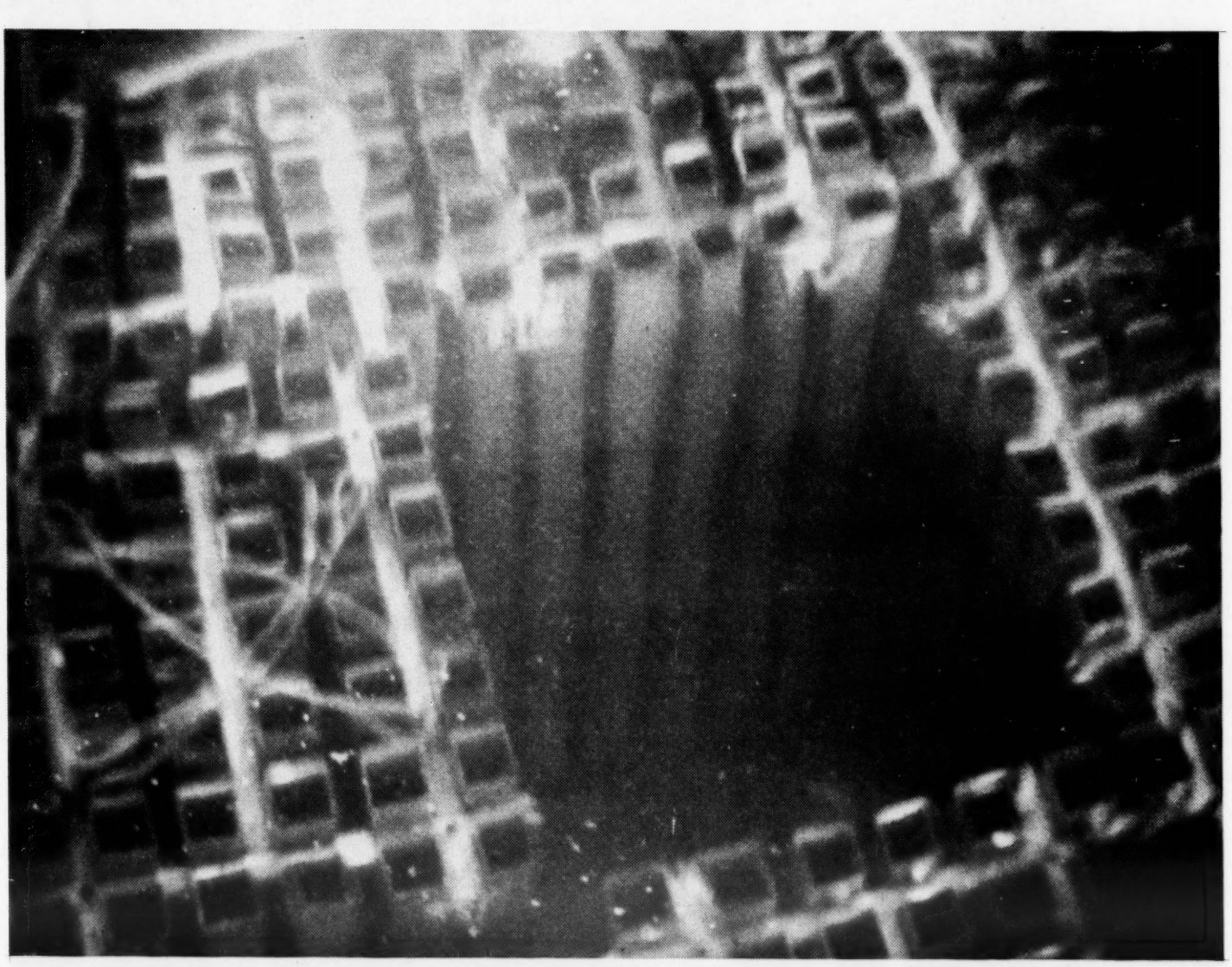
By employing cost-cutting measures now, the DOE is depriving the international nuclear industry — the same one it helped foster — of invaluable lessons. Larger reactors may be too big to ship in one piece, and the most difficult task decommissioning crews of the future will face is dismantling the pressure vessel and its contents.

HIGH-LEVEL WASTE MANAGEMENT

Discussions about decommissioning typically exclude the topic of high-level nuclear waste disposal. But high-level wastes — spent fuel and the byproducts of fuel reprocessing — must be removed from the plant before decommissioning can proceed. At present, not a single country has a permanent disposal facility for high-level wastes, and no such facilities are likely to be in operation before the turn of the century.

Until the mid-seventies, the international

Ron Scott, Sacramento Municipal Utility District



The spent fuel rod storage pool at the Rancho Seco nuclear power plant near Sacramento, California. Because there is no permanent high level waste repository to store this by-product of the nuclear fuel cycle, this pool began to run out of storage space. The solution in 1984 was to remove the racks that hold the fuel rods and insert new racks with a denser configuration, permitting greater storage in the same space. The rectangular void is an area where the old racks have been removed.

nuclear industry assumed that reprocessing of spent fuel would become a universal practice, providing fuel for the next generation of breeder reactors and a means of quickly removing the spent fuel from utility holding ponds. But along with uranium, fuel reprocessing recovers plutonium, which can be readily made into nuclear bombs. Concerns about nuclear proliferation, coupled with new discoveries of uranium, a slowdown in reactor construction, and the demise of most breeder programs, undercut the rationale for reprocessing in many countries. The U.S. program was abandoned, and today only France, the Soviet Union, and the United Kingdom have sizeable reprocessing industries.

In the United States, virtually all of the 12,000 metric tons of spent fuel produced to date is now stored temporarily in water-filled utility holding ponds. The volume of waste is expected to quadruple within 15 years. Utilities do not have adequate space for storing this spent fuel, nor is there any place they can send it. For years, the nuclear industry ignored the issue of permanent high-level waste disposal, thinking reprocessing would relieve it of the burden. Today the disposal problem, though managed by national energy agencies, is back in their laps. It is impossible to fully dismantle a nuclear plant if there is nowhere to put the spent fuel cooling in utility storage ponds.

Where to dispose of high-level wastes has become a contentious political issue in each of the 26 countries that produce nuclear power. Few national governments have been in power for more than several decades, and the lifespan of most energy agencies is even shorter. But the toxicity of high-level wastes requires that they be kept out of the biosphere for tens of thousands of years — longer than recorded history.

Since reliance on human institutions for such a long period of time is impossible, most countries have decided to bury their wastes in geologic repositories 300 to 1,200 meters below the earth's surface. Searching for stable sites is the current focus of most disposal programs. The characteristics of a good site include unfractured geology so groundwater will not migrate through the area and contaminate water supplies, low seismic activity, and the absence of mineral wealth so future generations will not find the area attractive for drilling.

DISPOSAL OF A RETIRED REACTOR

Removing the spent fuel is only the beginning of the decommissioning process. Few nations have independent commercial disposal facilities for low-level radioactive wastes, a much larger category that encompasses everything from work gloves and used equipment to contaminated water and soil. Although this waste is considerably less toxic than spent fuel and reprocessing wastes, it is produced in far greater volumes.

An average pressurized water reactor, the most commonly used nuclear technology, sends about 400 cubic meters of low-level wastes to burial sites each year. When the reactors are dismantled, they will each produce an estimated 18,000 cubic meters of low-level waste, half again as much as will have been generated throughout the unit's operating life. This is enough to cover a football field with radioactive debris

Ron Scott, Sacramento Municipal Utility District

A diver being hosed off as he exits the Rancho Seco storage pool. His job was to dismantle the empty spent fuel racks prior to their removal. The spent fuel rods stored in the pool give off both radiation and heat, and his exposure time was limited by both factors.

four meters deep. Decommissioning just one large reactor would yield a volume of contaminated concrete and steel equal to one-fourth the low-level radioactive wastes now shipped to all U.S. commercial dump sites in a year.

Until 1970, the U.S. and many other nations discarded low-level wastes by dumping them at sea. Belgium, Japan, the Netherlands, Switzerland, and the United Kingdom were still dumping much of their low-level waste until 1983, when the London Dumping Convention declared a moratorium pending a scientific study of the effect on the marine environment.

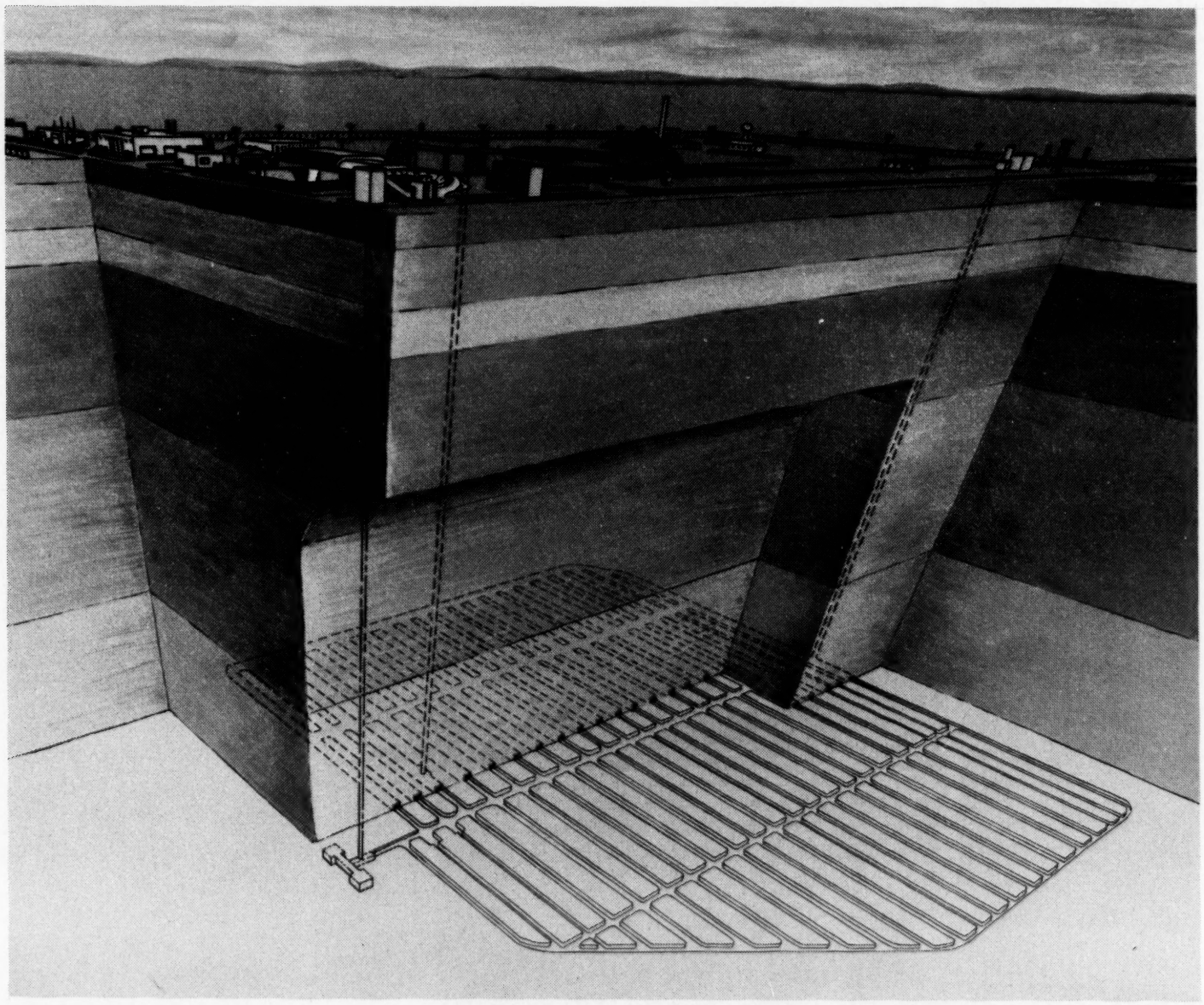
Many states are examining new disposal methods, but they are for the most part inexperienced in dealing with low-level wastes and have limited budgets. Congress has made the states responsible for the wastes generated within their borders, but no federal funds have been allocated for assistance, and the two organizations with the most expertise, the Nuclear Regulatory Commission and the DOE, do not plan to conduct additional research and development activities. Their role will be purely advisory. Despite the desire to build safer disposal sites, most states are ill-equipped to meet the challenge and fear that proposals to use alternative methods will result in regulatory delays.

Most nations that have decided to use nuclear power have shirked the responsibility of safely managing radioactive wastes. In 1981, the Atomic Industrial Forum, an industry trade group, observed that, "Because of the present waste disposal problem, it may not be possible to conduct a total decommissioning today. Therefore, the options a utility can choose at the present time are mothballing or entombment with onsite storage of all active material." That statement is still true today. Decommissioning policy is held hostage to the lack of disposal sites.

ESTIMATING THE COSTS

In 1978 the NRC asked the Battelle Pacific Northwest Laboratory to estimate the cost of decommissioning a generic 1,175-megawatt pressurized water reactor (PWR). A study they

U.S. Department of Energy



America's first high level waste repository will be dug deep into the earth at either Hanford, Washington, Yucca Mountain, Nevada, or Deaf Smith County, Texas. The waste arrives by rail or truck and gets lowered into the vaults where it must remain undisturbed for at least ten thousand years.

conducted two years later estimated the costs of decommissioning a boiling water reactor (BWR). These are the two most commonly used nuclear technologies in the world, accounting for 72 percent of all operating reactors — 165 PWRs and 77 BWRs. Battelle concluded that cost variations depended primarily on the reactor design and the number of years after shutdown that dismantlement would be deferred.

The Battelle figures were widely adopted within the utility industry and used as a proxy by many companies that had not developed their own estimates. But the studies were never intended to be used in this way. They were meant to be used as guidelines and to give utilities and their regulators a ballpark estimate of the decommissioning costs they were likely to encounter. As individual utilities began to conduct their own site-specific cost estimates, and as various component costs such as waste disposal rose much faster than anticipated, it became obvious that the initial estimates were too low.

In 1984, Battelle updated its studies, this time for the Electric Power Research Institute, and costs had indeed risen much faster than inflation over the preceding six years. Waste disposal costs rose the fastest. Assumptions were also modified to reflect current regulations and market conditions. For example, when the original PWR analysis was performed, it was assumed that decommissioning workers could be exposed to four times as much radiation during a one-year period as was subsequently deemed safe.

The projected price tag for immediate dismantlement of a 1175-megawatt PWR, using outside contractors, rose to $104 million and for an 1155-megawatt BWR to $133 million. Comparative site-specific, rather than generic, estimates for two 1100-megawatt reactors produced estimates of $140 million for a PWR (35 percent higher than the updated Battelle estimate) and $134 million for a BWR, excluding the costs of removing nonradioactive structures. A detailed three-year study of decommissioning costs in Switzerland concluded that retiring a nuclear plant would cost one-fifth as much as the facility originally cost to build.

Andre Cregut of the French Atomic Energy Commission believes that utilities will not begin to decommission their reactors until costs can be brought down to 15 percent of the original investment. He estimates that using currently available techniques, the cost of decommissioning would be at least 40 percent of the cost to build.

All of these projections assume normal reactor operating conditions. Economist Duane Chapman at Cornell University has observed that the Three Mile Island plant is so heavily contaminated that dismantlement may exceed the original cost. Although the level of contamination at Three Mile Island is many times higher than will be encountered at most power reactors, clean-up costs there are projected to pass $1 billion before decommissioning itself is contemplated. Chapman has also predicted that dismantlement might cost as much as reactor construction, in constant dollars, at plants where accidents have not occurred.

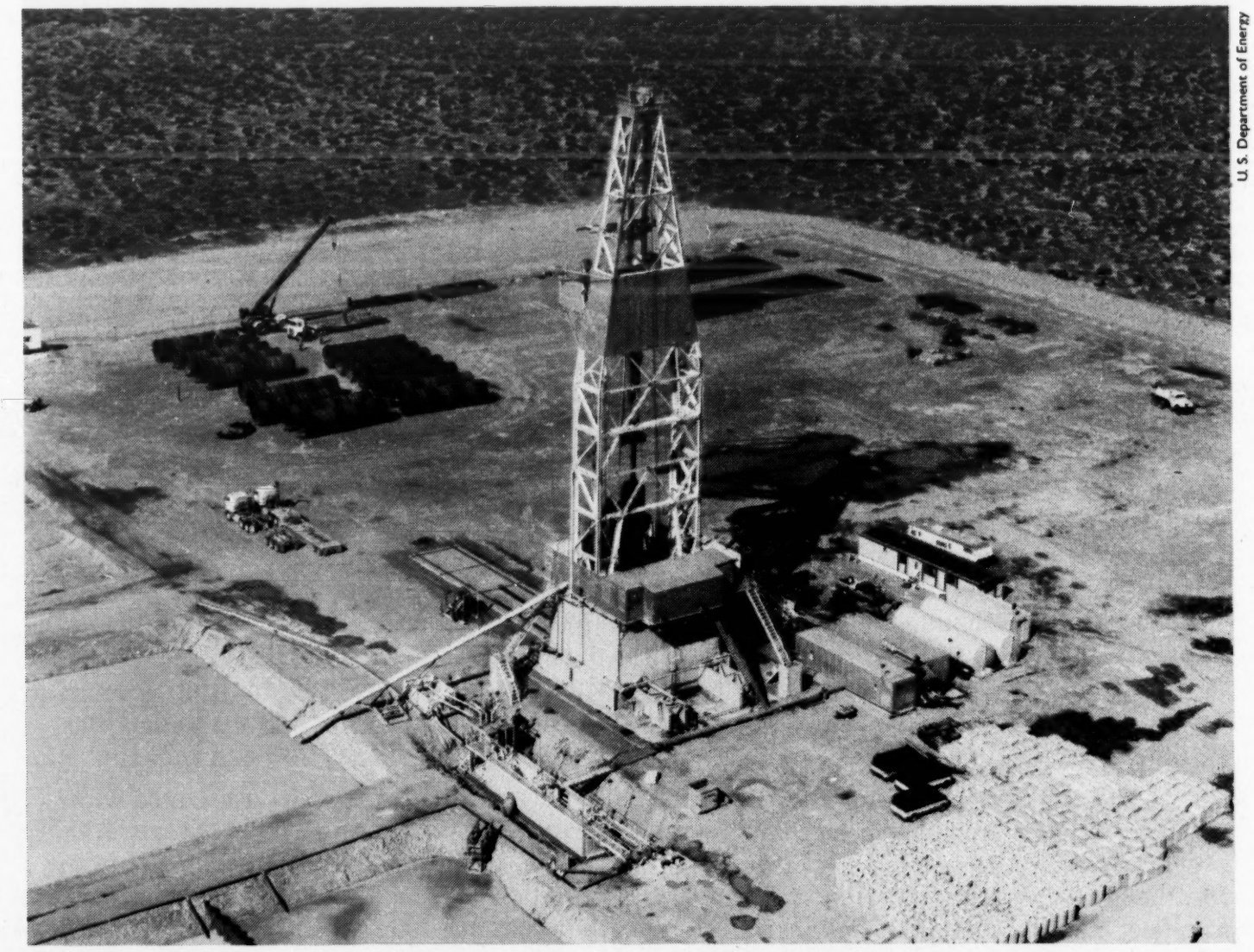
Research done at the Rand Corporation reinforces Chapman's skepticism. Analysts there have concluded that large-scale engineering projects based on newly developed technologies cost on average four times more than initial estimates. Recent U.S. nuclear power plant construction costs total 5 to 10 times original projections, even after accounting for inflation. Decommissioning estimates put forward by the nuclear industry presume that as experience is gained, costs will fall over time. But U.S. nuclear construction experience appears to defy the learning curve — costs rose over the years.

There are vast uncertainties associated with trying to estimate costs 30 to 100 years in the future. Assumptions must be made about the evolution of technologies and the likely increase in decommissioning costs, inflation, and real interest rates. Estimates must also include provisions for stricter government regulations and other unforeseeable events. The staff most familiar with the plant will have left the company and excellent record keeping will be required to inform the future crew of the reactor's intricacies and operating history. The longer dismantlement is deferred, the greater the margin of error and the higher the total costs are likely to be.

Although hundreds of nuclear power reactors have been erected around the world, projecting the cost of decommissioning them is still fraught with uncertainties, The bill for all the plants now in service could total several tens or several hundreds of billion dollars. No one can now say with confidence which estimate is correct. Only by using state-of-the-art technology to immediately dismantle some of the reactors being taken out of service will the industry be able to state with any certainty what future decommissioning costs might be.

SAVING FOR THE BURIAL

To ensure that adequate funds will be available, utilities should start setting aside money early in a reactor's life. If money is not collected from ratepayers during the years the plant produces power, the bill will be charged to future customers or taxpayers who did not use the electricity. In the event that regulators forbid the



U. S. Department of Energy

This 174-foot-high drill rig sits on the Cold Creek Syncline on the Hanford site, 22 miles north of Richland, Washington. If work proceeds it will drill a 3,400-foot exploratory shaft into the basalt below to see if it is stable enough to become a resting place for high-level radioactive waste. An obvious concern at all three test sites is groundwater which could carry radioactivity into aquifers. Here the Columbia River is six miles away.

collection of decommissioning funds from customers who did not use the nuclear power, the expense might bankrupt utilities or result in decommissioning shortcuts that could endanger future generations.

A variety of savings mechanisms have been proposed and, like an insurance policy, the plans providing the greatest assurance tend to be the most expensive. One way to guarantee that funds will be available in the future is to deposit all of the needed money in an interest-bearing savings account before the reactor enters service. Making periodic deposits into a decommissioning fund is another way to accrue the money. Customers can be charged a fee, based on the amount of electricity they use, that is collected monthly and credited to a decommissioning account. Utilities prefer to place the account on the books but fold the money into the "general revenues" used to pay all of the company's expenses, including the construction costs of new nuclear plants. This strategy allows the utility to forgo borrowing and keep debt payments low, but the method has been termed "phantom funding" by some observers because the money will be tied up in assets instead of being readily available to the utility when a reactor is retired.

When the time comes to decontaminate and dismantle the plant, a utility with an unsegregated account will probably need to raise cash by selling "decommissioning bonds." Borrowing capital for decommissioning promises to be expensive because investors will require a high return to cover the perceived risks.

If, on the other hand, money is provided by deposits begun when the plant enters service, if the account is managed by professional investors, and if the fund is allowed to grow until it is needed, the utility's financial situation will not be so precarious at plant retirement. Periodic evaluations of reliable decommissioning cost estimates and corresponding adjustments to customer rates will diminish future risks. Swedish utilities revise their decommissioning surcharges annually.

The least secure funding method postpones collection until decommissioning has begun. Under this strategy, utilities put off until the last possible moment the acquisition of debt

that could total billions of dollars. There is no assurance that the money will be available. Such last-ditch efforts are also unfair to utility customers if they are charged for decommissioning a reactor from which they did not receive power.

Of the four retired commercial reactors in the U.S., only one unit had begun to build a decommissioning fund before it shut down. The Pacific Gas & Electric Company, owner of the Humboldt Bay reactor, collected $500,000 during the four years prior to plant shutdown. In 1984, the Critical Mass Energy Project asserted that at least 11 reactors had gone through one-third of their operating lives without collecting any funds for decommissioning from ratepayers, and that nationwide only $600 million had been collected. This lack of financial planning prompted nine states to require mandatory periodic deposits into external accounts: California, Colorado, Maine, Massachusetts, Mississippi, New Hampshire, Pennsylvania, Vermont, and Wisconsin. Only one state, Michigan, does not allow the recovery of decommissioning costs in current rates.

If instead of the haphazard funding approach now in place, all of a utility's customers made monthly contributions over a 30-year period, decommissioning might be affordable. The average residential electricity consumer in the U.S., if served by an all-nuclear electric utility that assumed decommissioning costs of from $200 million to $1 billion for each 1000-megawatt reactor, would have paid some 6 to 29 percent more for electricity last year. Customers with inefficient electric-heating and air-conditioning systems would have paid more, but those using electricity efficiently would have paid far less. Actual increases would have been considerably lower because no U.S. electric utility relies exclusively on nuclear power.

A LONG-TERM STRATEGY

Just as today's cities would not be habitable without large fleets of garbage trucks and extensive landfills, the international nuclear industry is not viable without a sound decommissioning strategy. More than 30 years after the first nuclear plant started producing electricity, such a strategy has yet to be formulated. Even if reactor-ordering ground to a halt tomorrow, more than 500 reactors, including those currently under construction, will have to be decommissioned.

Unfortunately, decommissioning planning has lagged far behind reactor development. The International Atomic Energy Agency did not hold its first meeting on decommissioning until 1973, some 19 years after the first power reactor was built.

Industry emphasis is on creating new business, not demolishing old. Research and development for decommissioning is not even included as a category in detailed DOE or NRC budgets.

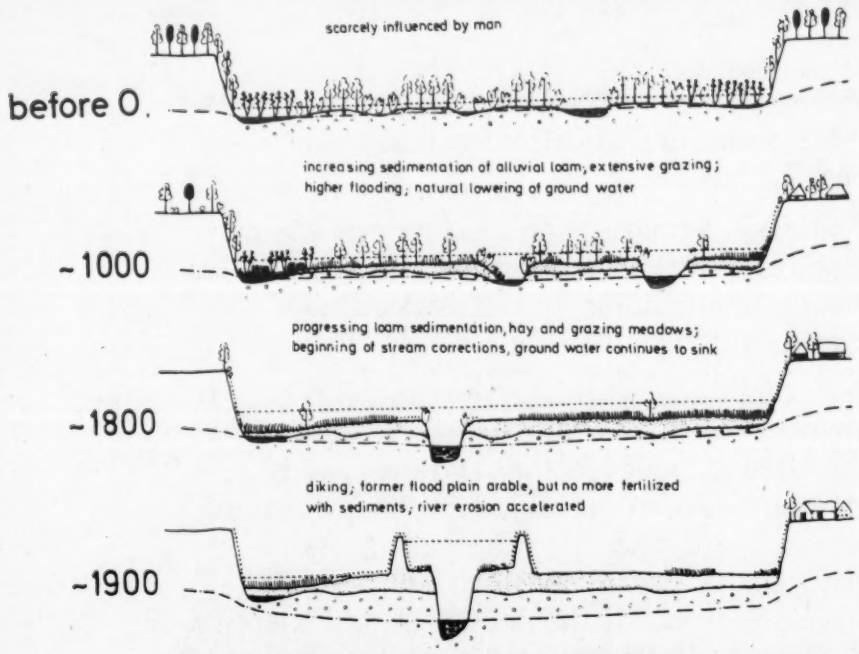
No country currently has the capability to permanently dispose of the high-level wastes now stored at a single reactor. And the already daunting task of managing low-level operating wastes is only the tip of the iceberg. As reporters Donald Barlett and James Steele have observed, "If the politicians and scientists in charge of nuclear waste had been running the space programs, astronaut John Glenn would still be orbiting the earth today."

Without detailed regulations and technical guidelines, utilities cannot plan intelligently for the future. Early knowledge of decommissioning requirements would also allow engineers to incorporate design changes that would facilitate later decontamination and dismantlement efforts. A simple concept that eluded manufacturers of the first nuclear plants was the value of putting a protective coating on all surfaces that would be exposed to radiation. Even a thick layer of removable paint reduces the surface contamination of structural components and thus the volume of low-level wastes. Limited experience with neutron-activated wastes indicates that their quantities can also be diminished by regulating the amount of neutron-absorbing impurities used in reactor steel and concrete.

A look at the decommissioning funding mechanisms in place in various countries indicates that we expect our children to pay our electricity bills. Without savings programs that equitably share decommissioning costs and assure that funds will be available when needed, today's electricity customers are getting a free ride. The longer funds collection is deferred, the greater annual payments will have to be in order to accumulate enough money.

During the next three decades, more than 350 power reactors will be taken out of service. Immediately dismantling one of the largest or most problematic reactors as an international test case would yield valuable lessons for future decommissioning projects. Firsthand experience would shed light on the reasonableness of the theories and assumptions now used for planning purposes. The owner could cover half the cost with governments and research institutes from around the world contributing the rest.

Taking full advantage of the learning experience offered by the reactors now coming out of service is sometimes viewed as a needless expense. But saving millions of dollars today could result in spending billions of extra dollars tomorrow. ■



The conversion of a natural river-valley landscape in Central Europe into a cultural landscape in the course of 2000 years.

LAND USE

Landscape Ecology

This text defines important new terms, like "tessara" (a critical functional unit of the landscape, with the word coming from the unit of mosaics on the walls of Byzantine churches), and it gives striking insights into the attempt to put cybernetics to practical use in land planning. The authors succeed in the intellectual integration they are postulating as essential: ecologists who understand human gestalt. The references are amazingly broad and often unexpected. The writing varies from abstruse to pithy. I found the academic approach easiest to deal with by gnawing at it in little pieces with music on in the background to drift back and forth into. There is a lot to consider here. —Terence P. Yorks [Suggested by Lew Ward]

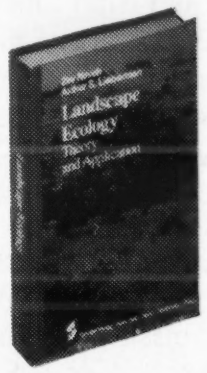
•

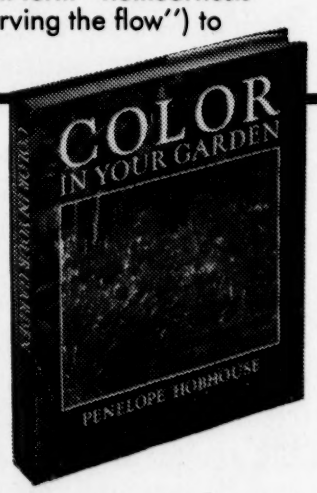
Waddington coined the important term "homeorhesis" (from the Greek meaning "preserving the flow") to denote evolutionary stability (as opposed to the stationary stability of homeostasis), or the preservation of a system's flow process as a pathway of change through time. As a goal, this concept means to keep systems altering in the same way as they have altered in the past.

•

Schultz suggested replacing the poorly defined "environmental education" with "ecosystem education" and regarding as its primary goal educating ourselves about our ecosystems by developing tools for proper whole-system thinking, seeing, and even talking. He cited Jantsch's stream analogy for this ecosystem education. In this you are not just an objective observer on the bank of the stream ("the rational approach") or going downstream in a boat and feeling it ("the mythological approach") but you are the stream, in tune with the whole system ("the evolutionary approach"). Schultz coined the term "holistic paralysis" for those unable to cope with the sheer complexity of the whole system. . . . He also pleaded for the education and training of unique ecosystem experts, instead of continuing to use traditional professionals. These should not be called "generalists" because they really would be specialists, knowing how to manage a particular ecosystem after thorough study of its interrelationships, cutting across the lines of conventional disciplines.

Landscape Ecology
Zev Naveh and
Arthur S. Lieberman
1984; 356 pp.
$46.20
($47.70 postpaid) from:
Springer-Verlag New York
Sales Service Department
44 Hartz Way
Secaucus, NJ 07094





Color In Your Garden

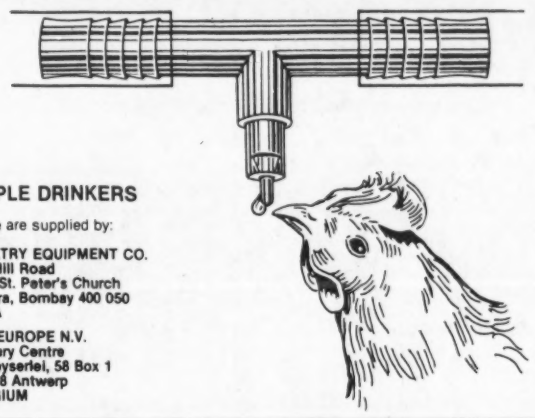
Have you ever watched somebody do something they were really good at and then asked them to explain how they did it? Words often fail. Arranging color in a garden is one of those things since it results from arranging plants both in space and through the changing seasons of the year. Penelope Hobhouse succeeds at sharing years of gardening experience and at explaining the whys of her very refined sense of what goes with what. She begins with a color wheel and basic theory and moves on to chapters with titles like "Clear Yellows," "Pinks and Mauves," and "Hot Colors." Each chapter has a plant catalog arranged by season.

The color photography and printing (Italian) are astounding. Landscapes so beautiful as to seem imaginary had me muttering, "Where are these places?" Many are old English estates managed by the National Trust; the author runs one at Tintinhull House in Somerset. The reasons for the current interest by American gardeners in English garden design and plant varieties are amply demonstrated in this book. —*Richard Nilsen*

Color In Your Garden
Penelope Hobhouse
1985; 239 pp.
$35
($36.25 postpaid) from:
Little, Brown & Co.
200 West St.
Waltham, MA 02254
or Whole Earth Access

•

Papaver Poppy
P. orientale, the oriental poppy, has flat transparent papery flower-heads in exciting colors: pink, white with a black eye, bright scarlet, and rich glowing dark red. Leaves in early spring are attractive, grayish and hairy, but after flowering look most untidy. Arrange your color scheme so that later-flowering perennials can be trained forward over poppy leaves and stalks. Miss Jekyll used the white-flowered perennial pea, *Lathyrus latifolius* 'Albus', for this purpose, yellow-flowered heleniums, or cloud-like blooms of gypsophila. It is worth taking trouble as the poppy flowers are glorious in season.



NIPPLE DRINKERS

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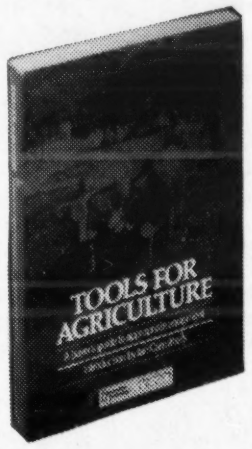
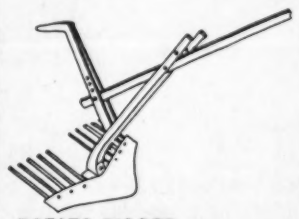
BELGIUM

Tools for Agriculture

A warped perspective of the world is an occupational hazard of life in these United States, and food production is no exception. The tools used to raise food by the rest of the world are the subject of this catalog. And "rest of" does not mean just the Third World — there's plenty of stuff in here from countries like Belgium, New Zealand, and Yugoslavia. This collaboration between England's Intermediate Technology Development Group (founded in 1965 by E. F. Schumacher) and West Germany's German Appropriate Technology Exchange lists tools from over 1,200 manufacturers in 70 countries. The photographs and line drawings are of good quality, and the names and addresses will be invaluable to serious shoppers. This third edition replaces one from ten years ago and is a major step forward in both quality and comprehensiveness.
—Richard Nilsen

Tools for Agriculture
Third edition
1985; 264 pp.
$28.50
($30.50 postpaid) from:
Intermediate Technology Development Group
P. O. Box 337
Croton-on-Hudson, NY 10520
or Whole Earth Access





POTATO DIGGER

A simple potato lifting implement designed to be drawn by a single bullock. It has a mean capacity of 0.25ha/day and is able to earth up 98 per cent of the crop, damaging as little as 1 per cent.

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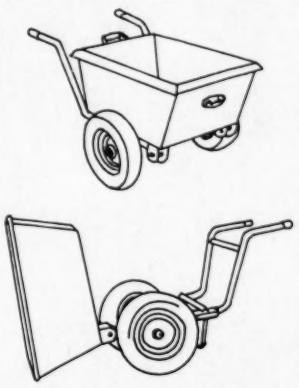
Satya Nagar
Bhubaneswar 75100, Orissa
INDIA



THE 'MAUA' TROLLEY

The 'Maua' Trolley is a tipping barrow with a 100-litre capacity reinforced container. It is supported on an iron chassis and two solid-tyred wheels, the 'foot' being centralized for maximum stability while stationary. The tubular steel handles given an overall maximum length of 1.18 metres while maximum height and width are 0.59 and 0.75 metres respectively.

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01.000 — São Paulo, SP
BRAZIL

BriefBook: Biotechnology and Genetic Diversity

Distilling science and technology for the nontechnical reader has always been a rare art, and this book takes it all a step further. It's aimed at writers and even begins with a page of story ideas. It's specifically for that kind of writer who has been assigned a story on biotechnology and whose entire previous exposure to the subject was trying to pith a frog in the tenth grade.

The format is extremely handy — spiral bound, large subject headings, short sections in plain English, including a glossary of technical terms. The book is full of voices from more than 200 hours of interviews with scientists and others in the field, and each voice is identified with a name, address and phone number in the back.

Genetic diversity is as important as having food on your plate. *—Richard Nilsen*

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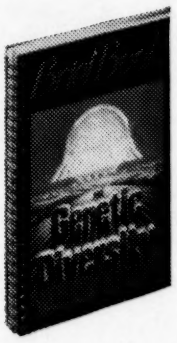
To be sure, unlike most U.S. farmers, if Third World farmers do use new seeds and don't keep their old ones, then valuable germplasm can be lost. Yet this speaks far more forcefully *for* the need to collect and preserve the old than it does *against* patenting the new. Iver Cooper avers, "The argument that patents decrease genetic diversity is a complete non sequitur. If you want diversity you make sure every wild strain is in a repository."

BriefBook
(Biotechnology and Genetic Diversity)
Steven C. Witt
1985; 145 pp.
$12.50
($14 postpaid) from:
California Agricultural Lands Project
227 Clayton Street
San Francisco, CA 94117
or Whole Earth Access



The Herb Gardener's Resource Guide

Praise be to catalogers, those diligent people who take cardboard boxes full of envelopes, brochures, and addresses and transform them into neatly alphabetized booklets. Paula Oliver is such a person, and her ***Resource Guide*** *contains over 500 entries, from nurseries and seed houses to botanicals and florist supplies. And for each listing the details are nicely tended to (wholesale/retail, mail orders, visitors, foreign orders). For anyone interested in herbs, I'd call it essential.* *—Richard Nilsen*
[Suggested by Portia Meares]

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Rutland of Kentucky *P. O. Box 182, Washington, Ky 41096 -or-* **The Herb Market** *Jail and Green St., Washington, KY 41096. (606) 759-7815.*
Plants, seeds, herbal and fragrant gift items and books. Excellent plant selection including such unusual varieties as Vietnamese Corriander, a vining species grown for the restaurant trade, and Greek Horehound, a silvery Mediterranean variety. Also offers a good selection of dry plants and a fine collection of rare thymes native to Eastern Europe, the Mediterranean, and the Canary Islands. They offer display gardens, workshops on cooking, potpourri crafting and wreath making. Garden and greenhouse tours available. Sales retail, wholesale, by mail and from the shop. Foreign customers, please inquire. Catalog is $2. Wholesale price list available. Of note: Washington, KY was founded in 1786 and has become a major historical site.

The Herb Gardener's Resource Guide
Paula Oliver
1985; 82 pp.
$7.95 postpaid from:
Northwind Farm
Route 2, Box 246
Shevlin, MN 56676

RESURRECTING ELMS

A second chance for elm trees in North America

by Ken Textor

MOST OF THE ELMS WERE already dead when we moved to Addison. We didn't know ours might die too. My wife and I bought the house in the middle of a Maine winter, when almost all trees look dead. It was tough to tell how healthy the buds were on limbs towering 70 feet above the property line. The spring told us: all produced healthy leaves — except one. That tree had been infested with Dutch elm disease.

Our elms were just seven of the dozens planted around Addison some 100 years ago. Local history buffs claim they were planted by a widow whose sea-captain

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I grew up in Madison, Wisconsin, a pretty town that boasted three lakes, a capitol building based on the one in Washington, and huge elms arching over almost every street.

I left Madison in 1967 and returned in 1973 to find shopping malls and dead trees. Without the shade and grace of the elms, most of Madison looked like a new subdivision.

The apartment I found had the only tree on the street, a basswood whose blossoms smelled of honey and buzzed with bees every summer. I silently thanked whoever had planted basswood instead of elm.

Most of the streets were replanted with young maples, pretty in the fall and healthy now. But every time I looked at their marching rows, I wondered how long before a maple disease would sweep the city, and wished that every third tree they had planted was a basswood.

—Kathleen O'Neill

husband was lost in the North Atlantic, but it seems more likely Addison's elms were planted for the same reasons thousands of towns around the United States planted them: the nation's centennial was nearing. What better way to celebrate than to have your streets lined with Liberty Trees? Moreover, the American elm's shape makes it a nearly perfect streetside shade tree. The elm is tall and vase-like, providing plenty of shade, with branches out of the way of even the tallest conveyance.

Historians believe the American elm was the first so-called Liberty Tree, rather than the white pine sometimes seen on early Colonial flags. In pre-Revolutionary War Boston, a giant elm stood on a common at Washington and Essex Streets and was often used as a rendezvous point for patriots. In its shade, the patriots planned their tar-and-featherings, troop taunting, and other "liberating" actions in British-occupied Boston. To meet at the Liberty Tree signaled the possibility of provocative incidents and made British soldiers wary. One night, the soldiers decided a reprisal was in order. With armed sentries present, they chopped the tree down, and furious colonists vowed new Liberty Trees around the country would be nurtured with British blood.

But all of this was doing my dying elms no good. Watching the leaves wither on that first elm, I felt the helplessness of the ignorant. Neighbors assured me Dutch elm disease was killing my trees, and there was nothing I could do about it. Unsatisfied, I started researching the disease, beginning a long journey into the world of the American elm (*Ulmus americanus L.*).

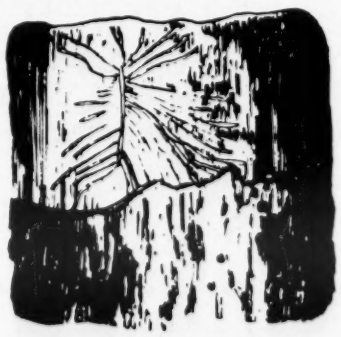
Dutch elm disease is a relative newcomer among arboreal afflictions in the U.S. The disease began its insidious career in the 1920s when European elms infested with the eggs of the beetles that carry the disease were imported to the New York City area. Before officials caught up with the shipment, some of the European elms had been shipped to Ohio and northern New York state, and the disease then spread too rapidly to be stopped.

"And it is still hard to stop," Maine State entomologist Douglas Stark told me. The disease is carried from tree to tree by two types of beetles. The primary carrier is the European elm bark beetle (*Scolytus multistriatus*), which apparently laid eggs in the bark of those imported elm logs. The native elm bark beetle (*Hylurgopinus rufipes*) can also carry the disease but seems to be less agressive. These beetles bore into the bark and lay eggs usually in the crotches of twigs near the top, or crown, of the tree. Both the beetle and its offspring carry the disease, which is actually a fungus (*Ceratocystis ulmi*). The disease quickly works its way into the water-transporting system of the tree. Eventually water is cut off from the leaves, and the tree withers and dies. Short-circuiting this process is the only treatment that has been developed for an infected tree.

According to Stark, the Dutch were among the first to work on treatments of the disease, thus they were stuck with the name. The disease actually originated in central Asia and worked its way west from elm to elm. There are four major species of elm native to the United States and five in Europe and Asia. Two major strains of the disease attacked the European elms, which over the centuries have developed some resistance. But a "particularly virulent strain" hit the American elm. Since the disease was unknown in North America before the turn of the century, the destruction it caused was quick and widespread.

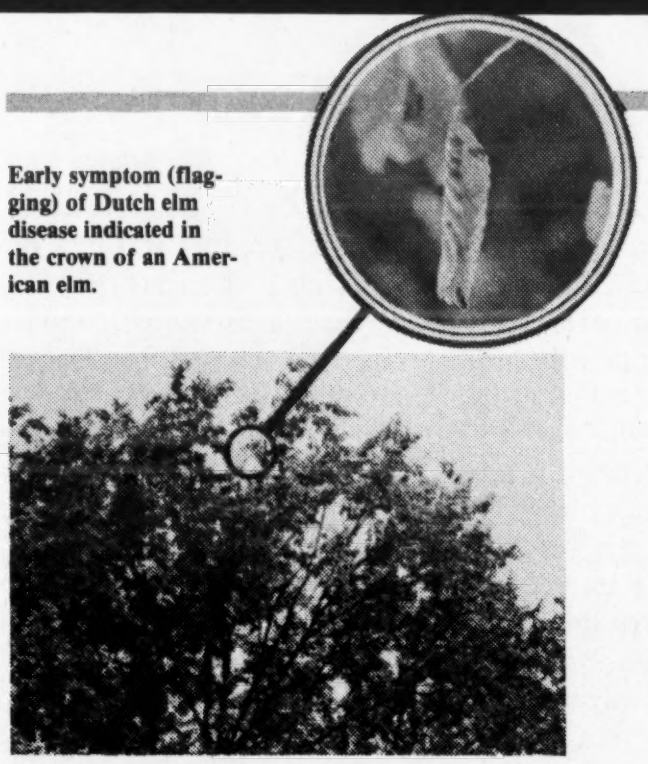
In search of a treatment for the disease, I contacted Don Hicks, our local forest ranger. Hicks explained that between cost and reliability, the treatment process is a major undertaking. It begins with lopping off the infected branches, many of which are tough to get at 70 feet off the ground. And even if you enjoy the height, you need experience to know exactly how much of the limb should be taken off. You must cut enough to be certain you've removed all of the diseased part of the tree. If the cross-section of the limb has a brown stain amid the outer annular

The beetle . . .



breeds under bark of dead or dying elms . . .

then, at maturity, emerges and flies to the top of a healthy elm where it feeds in twig crotch, dropping spores of the fungus of D.E.D into the wounds and infecting the healthy tree.



Early symptom (flagging) of Dutch elm disease indicated in the crown of an American elm.

rings, you'd better go up and cut some more. That stain — often difficult to see at first — signals the presence of Dutch elm disease. So a tree surgeon becomes necessary, at about $100 a visit. In addition to the limbing, you must *completely* clean up all bark and branches and either haul them to a landfill or burn them — immediately. Otherwise, immature beetles can still hatch and spread the disease again.

In addition to the removal of infected tree limbs, the tree should also be treated with the appropriate fungicide and/or insecticide, Hicks said. Only licensed tree surgeons can buy the treatment chemicals, which require specialized equipment for injection into the tree. Like a patient in intensive care, the tree is hooked up to a pressurized unit containing the chemical, which is then injected via dozens of small tubes inserted into holes drilled in the base of the tree. This process, which is often continued for several days, can cost up to $500. Moreover, nearby elms (mine were only 40 feet apart) also should get injections as the beetles may have already bored into the bark without the telltale wilting. "And there's no guarantee it will work the first time," Hicks warned. The process must often be repeated as the beetle's larvae are often numerous enough to withstand the first dosage.

Another problem in treating a diseased tree is the condition of elms nearby, particularly diseased elms as much as five miles to windward. Although the disease-carrying beetles are not particularly good flyers, a steady strong breeze can bear them along, spreading the disease as much as five miles in a year. Addison is on Maine's coast, where westerlies blow fairly steadily all summer long. Towns to the west of Addison started losing their elms several years before Addison did. And, predictably, towns downwind of Addison started losing their elms shortly after we did.

Dutch elm disease can take its victims quickly. In the space of the two weeks I gathered information and tried to convince myself I could afford to spend $2,000 on a project that might well fail, the disease made the decision for me. Both Hicks and Stark said a tree with more than 20 percent of its crown infected can't be saved. My first elm went over that limit by the end of June. With a heavy sigh, I sharpened up the chain saw and started the crowd-attracting process of cutting the immense old sentry down.

The first thing everyone seems to notice when working with elm is its smell, which is reminiscent of a cow barn. In fact, elm wood used to be a favored floor planking in cow barns because of its ability to resist the rotting effects of bovine urine. Also, its interlocking cellular structure makes it very tough and resistant to wear from animals' hooves. This toughness is the second thing anyone sawing up an American elm tree notices. I was intent on cutting it into firewood, since that is our primary heating source. But of all the hardwood species I've used my splitting maul on, elm is by far the most difficult to rend. That probably accounts for it being used for wagon wheel hubs, both in the past and among the Amish today. Other uses include flooring, railroad ties, barrel staves, paneling, boat frames, and furniture.

As the progressively bigger rounds absorbed more and more wedges, I thought of taking the remaining butt log (12 feet long and two-and-one-half feet in diameter) to a sawmill. As a boatbuilder and cabinet maker, the extra hardwood would come in handy. But the first mill owners I spoke to were not of the same mind. Since elms are often planted to mark boundary lines, they often have old pieces of fence wire, nails or iron pins embedded in them. Since retoothing a sawmill's blade can cost $500 or more, these mill owners were not willing to take a chance. But modern technology helped me talk one younger sawyer into the job. He and I carefully examined the log with a metal detector before we sawed it up. The result: 229 board feet of elm planks, no iron pins.

As I worked quickly to clean up the debris of the fallen elm, I noticed the bark was very loosely attached to the remaining pieces of limbs. I was advised to strip this bark off and to burn it immediately to prevent further spread of the disease. Even though the disease hadn't worked down into the lower sections of the tree, the beetles would still use the bark to raise more of the disease-carrying brood. As the summer went on, I split and stripped, carted and burned.

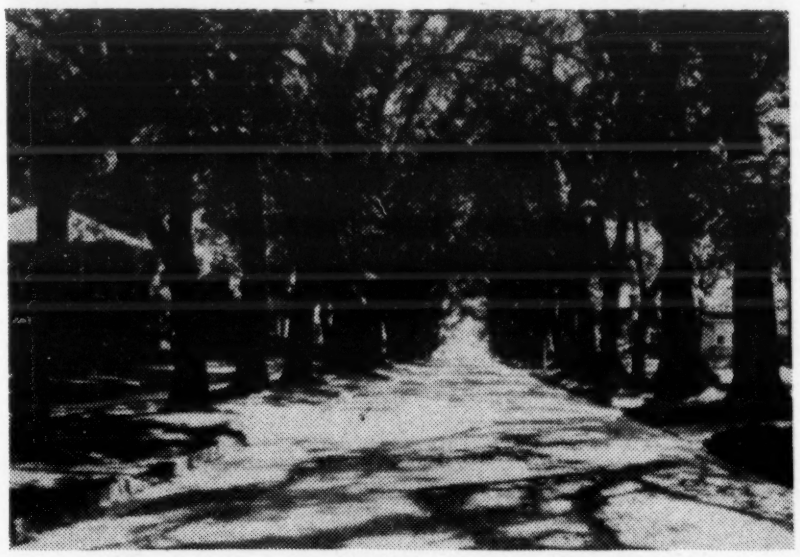
Hicks and I didn't know it, but while I worked, a fumigant for treating infected, discarded elm wood had been developed. The University of Georgia's Entomology Department reported good results by treating the wood with methyl bromide, a fairly common insecticide. Although more tests are under way, the method appeared to be a good alternative to the time-consuming processes of burning or burying the discarded wood.

The rest of the summer was dry, and many trees' leaves changed color early that year. But the elm nearest my first fallen tree changed first, and in my heart I knew the end was near for it too. This elm, however, was in the town's right-of-way, arching well over nearby power lines and leaning in an unfavorable direction. Taking it down required professional attention, and the Maine Department of Transportation agreed to undertake the job in due course of time.

To make a long story short, within two years of our arrival in Addison, all our elm trees were dead. Even if we had tried to save them with inoculations, it is unlikely they would have survived. Other elms around town had died of the disease, many just left standing, providing a perfect breeding ground for more elm bark beetles. Soon our barn loft groaned with over a thousand board feet of drying elm planks. I had enough wood and skills to try elm in all its traditional applications except the wagon wheel hub. As I worked the wood into a small, experimental end table, it became clear that elmwood — in death as in life — was something special. When finished with a clear varnish, it catches and throws light like a hologram. Look at it one way, and the wood appears to have one depth and color; from another perspective, another depth and color. The wood itself ranges from whitish brown to light brown or reddish brown. The wood seems positively alive. Our elms had come full circle.

Dutch elm disease has struck hardest east of the Mississippi. Every state in this area has a program to at least educate the public in minimizing the effects of the disease. Michigan, New York, Wisconsin, Georgia, and Maine head the list of states with long-standing research programs trying to come up with new ways to prevent the disease's spread.

Private organizations are also getting into the act. The Massachusetts Audubon Society, the Entomological Society of America, and other organizations have taken a special interest in eradication of Dutch elm disease. An umbrella organization, The Elm Research Institute, is spearheading a nationwide drive

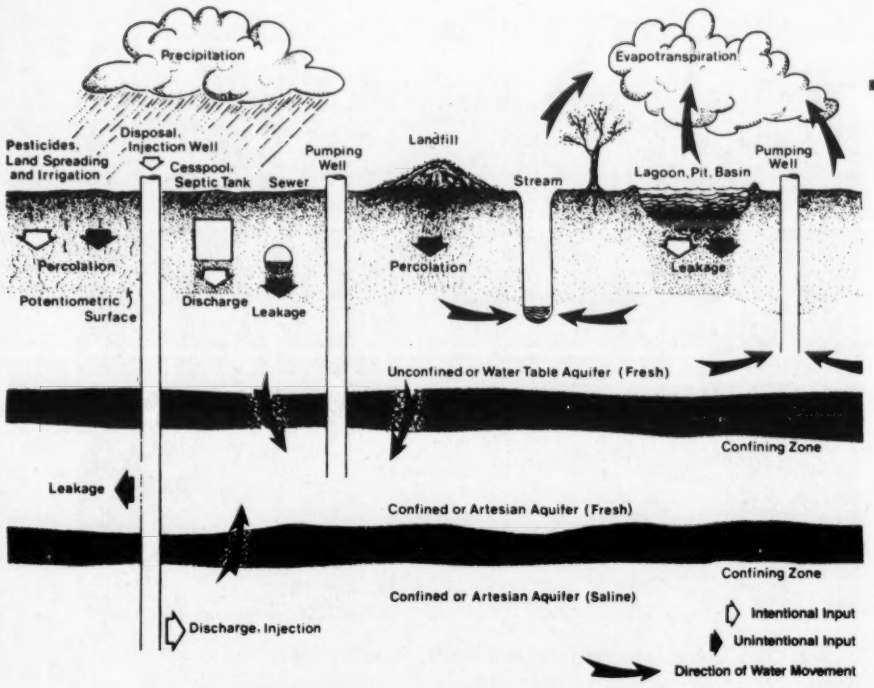


Above: Gillet Avenue in Waukegan, Illinois, Summer 1962.
Below: The same street seven years later.

to replant elms. Founded by John P. Hansel in 1967, the institute has also undertaken a massive drive to help save the American elm, complete with workshops, films, seedling plantings, and a toll-free hotline: 800-FOR-ELMS (367-3567).

(One of their projects is cultivating a disease-resistant elm. This hybrid strain, called "American Liberty," was propagated from an 18-year-old parent tree in Wisconsin that has withstood four deliberate inoculations. A one- to two-foot sapling costs $15 from the Elm Research Institute of Harrisville, NH 03450. A free tree comes with membership [$10].)

I must still play the waiting game. Although I planted oaks and maples in place of the fallen elms, I want to leave behind at least one elm, but elms in Addison are still dying or need to be removed before new ones can be planted. If the disease has swept through your area but has not been heard from in five years or so, you can start replanting, even with ordinary varieties of elm. Contact the U.S. Forest Service or your local state forest service for where seedlings can be obtained, the advisability of replanting, and growing instructions. You may even have your Liberty Tree growing in time for the rededication of the Statue of Liberty. ■



How waste disposal practices contaminate the groundwater system (not to scale).

Waterlines

Beautifully illustrated with drawings and photos, this is simply the gem of Third World magazines concerned with water supply, diseases, and appropriate tools. I like articles like "Pumps and Pipes: Do they really improve the quality of life?" —*PW*

•

It is primarily women that use new water systems. Their role as household managers means that in food preparation, washing and bathing, women are the primary users and mediators between the water source and the household.

Any planned change in water availability or excreta disposal should be based on information about their present knowledge, attitudes, and practices. . . .

The choice of water for drinking, cooking, laundry, bathing, and other household functions is a result of women's careful decisions, based on what they have learned from their mothers and grandmothers, and on their observations of the costs and benefits of any change.

Waterlines
(The Journal of Appropriate Water Supply and Sanitation Technology)

Frank Solomon and Frances Stuart, Editors

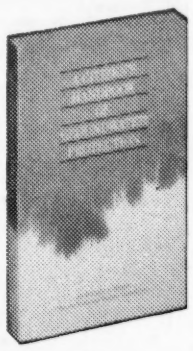
$14/year
(4 issues) from:
Intermediate Technology Publications, Ltd.
9 King Street
London WC2 8HN
United Kingdom

Using the newly-installed standpipe at Litsenyan-yeng village (South Africa).

A Citizen's Handbook on Groundwater Protection

This review can be short. If you have or suspect ground water problems in your community or state, buy this book. —*Peter Warshall*

A Citizen's Handbook on Groundwater Protection
Wendy Gordon
1984; 208 pp.
$10
postpaid from:
Natural Resources Defense Council
122 East 42nd Street
New York, NY 10168



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This chapter addresses six basic features common to almost all citizen initiatives:
Defining the problem.
Educating yourself.
Building support and spreading the word.
Setting specific goals.
Forcing action.
Using the media.

Troubled Water

The news in this book is not easily swallowed: plastic pipes leach carcinogens into drinking water; the Clean Water Act has not been effective; in-house water treatment like activated carbon helps, but far from insures clean water; bottled water may be just as polluted as tap water. But the quick, flowing prose and the informative, muckraking style make this the best book on contemporary water politics. —*PW*

•

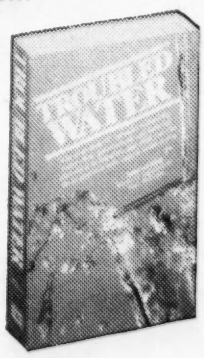
Quick Fixes
Here are a few short-term measures for reducing the concentrations of pollutants in your water. They are simple, but limited in the protection they provide.

Let your water run at full force for two or three minutes first thing in the morning. This will clear out relatively high levels of lead, cadmium, and copper that may have built up in the water sitting overnight in the pipes.

You can eliminate bacteria and some organic chemicals from your water by boiling it at least 20 minutes. Experiments conducted by the EPA have shown that boiling removes only *volatile* organic chemicals — or those that evaporate easily. The chemicals escape into the air, so try not to breathe the air directly over the boiling water. Boiling is time-consuming and energy intensive and may concentrate the nonvolatile organics, heavy metals, and nitrates left behind in the water.

Whipping your water in an electric blender can remove some volatile chemicals. You should blend the water for about 15 minutes, with the top off.

Troubled Water
Jonathan King
with Matt Rothman
1985; 235 pp.
$8.95
postpaid from:
Rodale Press
33 E. Minor Street
Emmaus, PA 18049
or Whole Earth Access



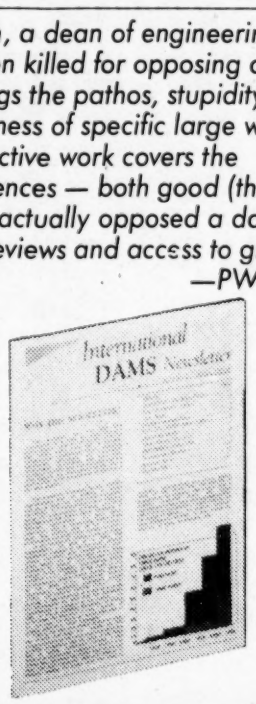
U.S. Water News

*This monthly newsletter has an engineer's bias, but it is the most informative publication on current water events across the nation (water quality, supply, water rights, legislation, litigation, conservation, the water industry, local community projects, and a lot more). Make sure your library or environmental center subscribes to this — **The Wall Street Journal** of water publications. —PW*

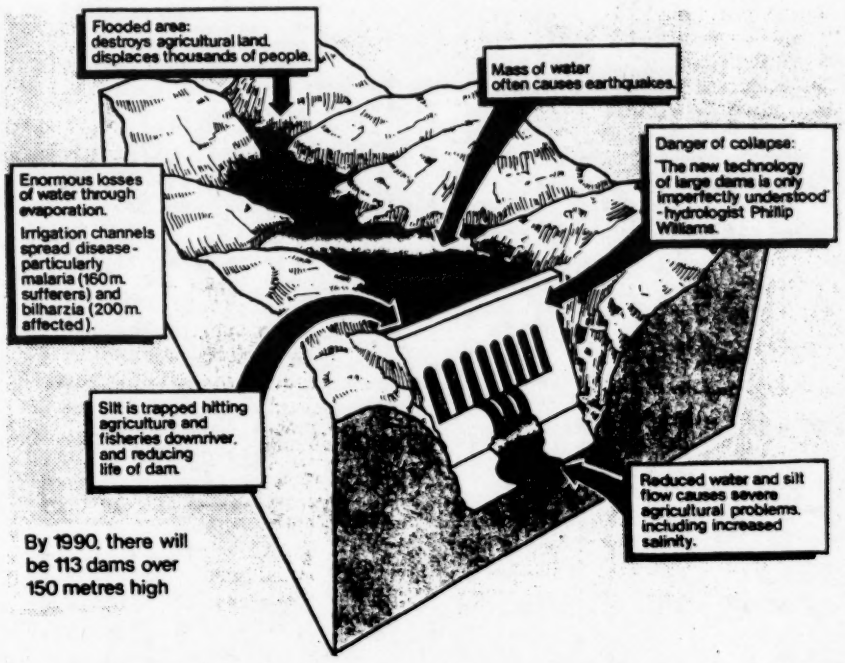
U.S. Water News
Thomas C. Bell, Editor
$28/year
(12 issues) from:
U.S. Water News, Inc.
230 Main Street
Halstead, KS 67056

International Dams Newsletter

Dedicated to Nart Tuntawiroon, a dean of engineering in Thailand who may have been killed for opposing a large dam, this newsletter brings the pathos, stupidity, pervasiveness, and destructiveness of specific large water projects to the surface. Its detective work covers the planet and unearths U.S. influences — both good (the U.S. Army Corps of Engineers actually opposed a dam in China) and bad. Good book reviews and access to groups like Friends of the Ganges. —PW



International Dams Newsletter
$30/year
(6 issues) from:
International Dams Newsletter
c/o FOR Foundation
Fort Mason Center
Building C
San Francisco, CA 94123



Casa del Agua

An eight-page newsletter on an experimental home completely fitted for testing rainwater harvesting, cisterns, greywater recycling, effects of plant life, low flush toilets, etc. The best-designed testing program for households in arid climates or wherever. —PW

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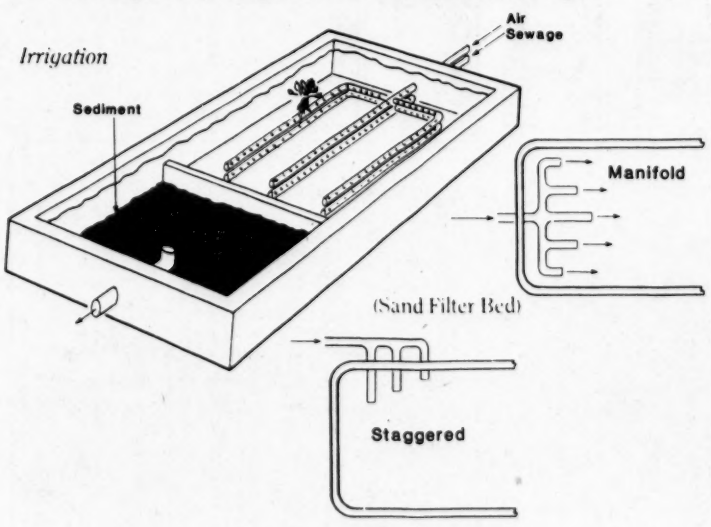
The Water Maide gray water recycler is a commercially available cartridge filter system which utilizes a replaceable swimming pool type filter and a settling tank. The filter and tank purify the water enough for it to be used for underground irrigation or for toilet flushing.



Casa del Agua
free from:
Office of
Arid Land Studies
845 North Park
Tucson, AZ 85745

Conserving Water: The Untapped Solution

This is a typical Worldwatch paper filled with fascinating facts and, at times, blissful naivete. It lays out the obvious: you can cut water use in half by conservation or double supply by building new dams, aqueducts and pipe systems. It is, for my taste, weak on the subtle. For instance, it praises Arizona's water planning. Yet, in Arizona, water conservation has one goal: to provide more water to aid developers to destroy more desert and Californicate more rural areas. Increasingly, environmentalists would rather save land and waste a bit more water as a control mechanism on greed-ridden development. Similarly, over half the water in California winds up feeding cattle by growing forage crops. A great water conservation device is: eat less beef! Probably one or two fewer hamburgers per year would save more water, more economically than installing sprinklers or drip-irrigation. Despite the shortsighted focus of this pamphlet, it is — as usual for Worldwatch — the best overview of the need for water conservation available. —PW

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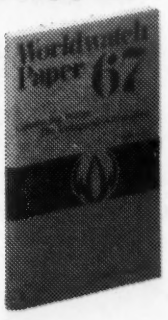
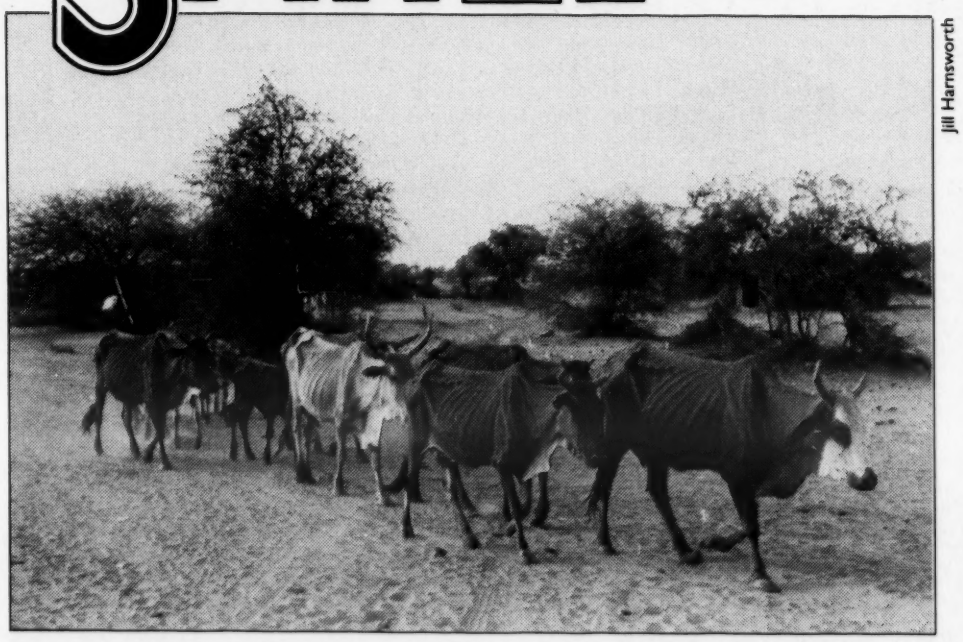
Robert Chambers of the University of Sussex cites farmers of Gujarat, India, who were willing to pay 7-9 times more for pumped groundwater than for canal water because the former was more reliable. Since farmers ultimately use the water and know best what their system's problems are, their involvement in management decisions is crucial.

Conserving Water: The Untapped Alternative
Sandra Postel
1985; 66 pp.
$4 postpaid from:
Worldwatch Institute
1776 Massachusetts Avenue, NW
Washington, DC 20036

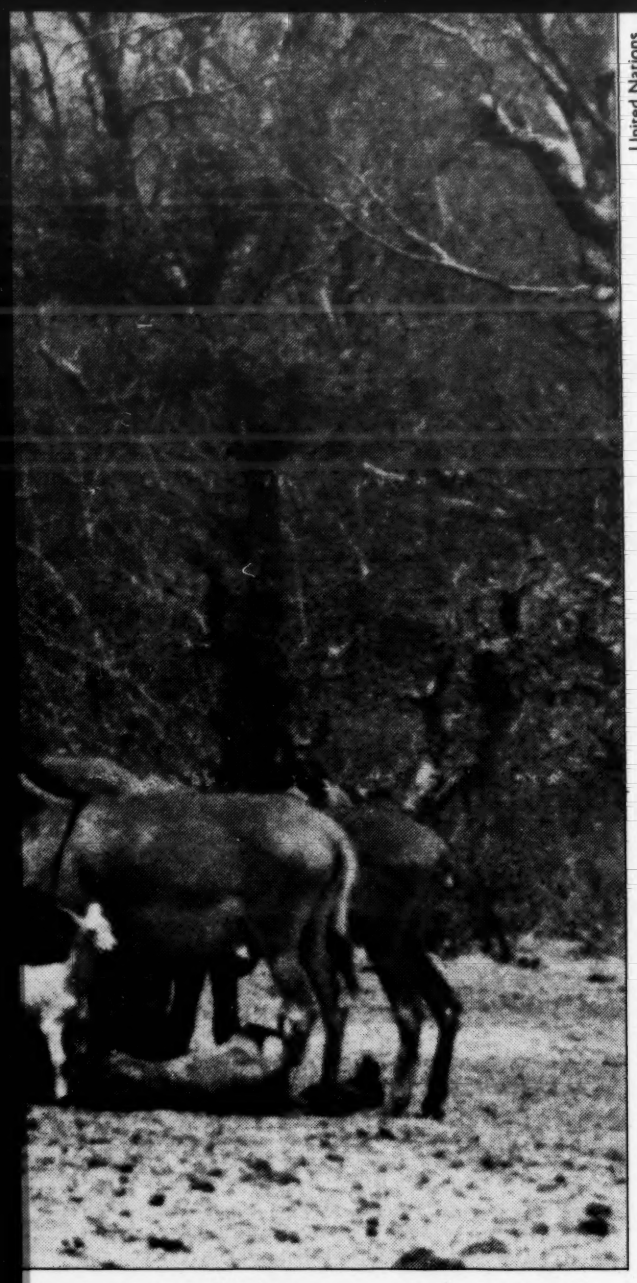


Traditional Drought and Uncommon Famine in the Sahel

An analysis of why life in the Sahel is so dismal and why generous aid has, to date, been futile. Somehow the fact that dozens of functioning cultures inhabit the Sahel has been overlooked.



Jill Harnsworth



United Nations

Members of the nomadic Tuareg tribe draw water for their flocks near the village of Nara in Mali.

I DON'T KNOW THE NAME of the Fulani cattleherder, so I will call him Musa. Bending over his well, Musa knots together the two pieces of well rope and straightens. The new rope joins a dozen other pieces that hold a bucket 100 feet below. His well is now twice as deep as usual.

It is June, 1984. The annual rains, lifeblood of the Sahel region in West Africa, should be coming north with green rebirth for the dusty, flat rangeland. Musa spends his days watering his herd, raising buckets of the muddy water that seeps so slowly into his well. Again the rains are late, and he fears this year will repeat the year before, when the rains failed, the crops and pasture shriveled, and people went hungry.

The Fulani herd their cattle in northern Burkina Faso, one of six sub-Saharan countries of the Sahel, the arid savannah that extends 2,000 miles from Senegal on the Atlantic Coast to Chad in the interior of the continent. The term "sahel" is Arabic in origin and means "border of the desert." Musa might not know about Ethiopia's famine, 2,000 miles east, but he does know drought. He knows the signs the Ethiopians see as their land parches and fails to feed them. He understands the foreboding they feel as they watch their crops wither, as they search the sky for rain clouds, as they push their herds further to vanishing pasture.

The Fulani, an ethnic group of about nine million in West Africa, conquered their present land by "jihad," or Muslim holy war, during the 19th century. They herd the great majority of the cattle, sheep and goats in the Sahel and are typical of Sahelian peoples. One third of the Fulani are semi-sedentary; they raise millet and corn to supplement their meat and dairy food. One hundred thousand Fulani are true nomads, following the rain and pasture, subsisting entirely from their herds.

Of necessity, the Fulani are experts in extracting a living from the harsh Sahel. Their cattle herding customs take advantage of the lush northerly pastures fed by summer rains and use the wetter areas for grazing during the dry season, when the Sahel might be mistaken for the desert itself. During the dry season, the sun scorches the earth and daily temperatures regularly push past 100° F. Relative humidity is predictably low. The vast plains do nothing to deflect a desiccating wind, the cold *harmattan,* that blows off the Sahara. In a good year, eight to ten consecutive months are rainless. The rains come between May and September, but they are often torrential downpours, sluicing off rather than soothing the arid soil. "Average" years bring eight to twenty-four inches of rain to the Sahel, but as with many drylands, average rainfall is exceptional, and many years the peoples of the Sahel endure destructive floods or drought.

Two years later, in 1986, the drought shows signs of abating, though it is inevitable that it will return. It is less certain whether the return of the drought will mean famine to the Sahel. According to Dr. Paul Stoller, an anthropologist studying in Niger, people in their 50s and 60s said they had never seen it so bad. In 1984 people had been reduced to eating millet stumps, pounding the stumps to make a gruel. Even the cows would not eat it.

Stoller's report brings a disquieting sense of deja vu. The Sahel first made headlines during a drought and famine that lasted from 1968 to 1972, when a 40 percent reduction in "normal" rainfall brought six million livestock herders and farmers to the brink of starvation. At least one hundred thousand Africans died.

The equation is not simply: The Sahelian drought equals famine. A raft of other factors determine how well the Sahelian peoples and their cultures stand the withering stress of drought, not the least of which is the failure of well-intentioned Western experts and the solutions they have proposed.

by David Tenenbaum

It's a shame our generosity isn't more informed. Irresponsible goodness, I'd call it. Science writer David Tenebaum journeyed on local buses in the Sahel to see firsthand what his aid was doing in desert lands. *—Kevin Kelly*

Barely alive cattle are herded from one dry patch of brush to another in Abala, Niger. The drought got progressively worse for the three years following the date of this photo in July 1982.

Jill Harnsworth

Displaced Bella nomads near Douentza, Mali, set up home in a refugee camp after their cattle died. The fence of fringed weavings mimic the walled compounds of Islamic culture.

Opposite page: a young girl of the Samburu people in northern Kenya tends the clan's cows.

The world's leading authorities on surviving the drought in the Sahel don't come from Indiana or Texas. They come from places like Mancoulicounda in Senegal, a village in the dusty, hungry rangeland of the Sahel.

The true experts are the Sahelian peoples. Their cultures are storehouses of wisdom for surviving in the drylands, where they have lived for centuries.

Despite its harshness, the Sahel has been home to humans for millenia. It hosted great trading empires such as Mali in the 13th century and Songhai in the 15th and 16th centuries. Major trade cities grew on the borders between the ecological zones. Legendary Tombouctoo (Timbuktu), on the Niger River in Mali, arose in the 11th century as a center of Islamic learning and became a headquarters for the trans-Sahara caravan trade. As recently as 1950, camel caravans hauled goods north from Tombouctoo across 1,500 miles of desert to the Mediterranean coast and south on the shorter trip to the Gulf of Guinea.

DOZENS OF DISTINCT CULTURES inhabit the Sahel. Senegal, for instance, a nation the size of South Dakota on the Atlantic Coast, contains eight ethnic groups. Depending on their location, tradition, and political and military might, those ethnic groups have exploited different niches in the delicate ecosystem of the Sahel. Farmers grow drought-resistant millet and sorghum on the wetter southern plains or near good wells further north. Pastoral peoples (some purely nomadic, others semi-sedentary) herd animals on the desert fringe.

The complexity of Sahelian life might surprise those who expect to find a few nomads and their goats. To conserve rangeland in the 19th century, a Fulani ruler named Sheik Ahmadou developed for the rich Niger River delta south of Tombouctoo a code called the *Dina* that classified herds and specified migration routes to avoid massing stock. The Tuareg, a fierce pastoral people who until recently held slaves and serfs, utilized at least three sites for their migrations: oases in the desert, camps in the Sahel, and villages in wetter areas for the dry seasons and years. Negotiated arrangements between landholders and herders were common. When the Tuareg moved south, they paid farmers with meat or dairy products for grazing privileges.

But the peoples of the six countries of the Sahel — Senegal, Burkina Faso, Mauritania, Niger, Chad and Mali — are among the world's poorest. In 1980 Burkina Faso had an average per capita income of $190 and a literacy rate of 10 percent. In Senegal, where 60 percent of the population could read and write, the average per capita income was $450.

The political weakness of the Sahel's nomadic and semi-sedentary peoples reinforces their third-class status. Only in Mauritania do pastoral peoples control the government.

Between 1973 and 1980, drought- and famine-stricken sub-Saharan Africa received at least $5 billion in emergency relief and other forms of agricultural aid intended to combat the devastating effects of subsequent droughts. But has it done any good? Agricultural aid directed to the Sahel was predominantly for large projects designed by foreign "experts." Project planners tried to settle the nomads and feed their cattle in feedlots a la Texas; they tried to monetarize, or "rationalize," the traditional systems of exchange so they could offer incentives to Africans for using Western practices; and they promoted export rather than subsistence crops.

Grandiose projects dammed rivers to irrigate crops, yet cash crops got the irrigation water, and pastoral people who had used the seasonally flooded riverbanks for grazing or farming were forced out. Now, the dams have begun to silt up; in some areas the soil is too salty to grow crops.

One form of aid favored during the 1950s and 1960s was a deep, large capacity, and expensive well — a borehole. The theory was that if herds had access to water, they could graze greater pastures. According to Francis Moore Lappe and Joseph Collins' *Food First,*

> Before long on average in the Sahel 6,000 head of cattle were milling about wells surrounded by grazing lands that at best could feed 600. After the cattle ate out the areas around the wells and

> trampled down the soil, the caked earth could no longer even absorb the scarce rains. One eye-witness reported that each well "quickly became the center of its own little desert forty or fifty miles square."

In one now-celebrated case, Tuareg herders in Niger asked that a borehole be capped to ease the destruction of the rangeland.

Most foreign technical assistance in the 1970s, of dubious value in any case, went to develop crops for export. Almost all the grain grown in the Sahel is rain-fed and locally consumed, yet only 16 percent of foreign aid since 1975 has been used to develop rain-fed agriculture. Large-scale aid projects stress the Western style of agriculture, which is reliant upon expensive imports of fertilizer, pesticides, fuel and machines. The peoples of the Sahel simply cannot afford these imports.

The roots of these "inappropriate and destructive development programmes" can be traced to the Treaty of Ghent in 1885, when European powers seeking greater export markets, sources of raw materials and strategic advantages pinned their flags on huge tracts of West Africa. These colonial powers failed to account for the needs of the African peoples, particularly the wide-roaming, poorly understood, and powerless pastoral peoples. The result was a map of Africa that bore little relation to indigenous holdings and traditional political and ethnic relationships.

Ironically, the new national borders inhibited the nomads' essential weather-directed migrations to good pasture. The most graphic description of the harm wrought by national borders comes from Colin Turnbull, in *The Mountain People.* Turnbull lived with the destitute remnants of the Ik people in Northern Uganda. According to Turnbull (who is not undisputed), the Ik were starving because they were cut off by national borders and national parks from traditional grazing grounds. Cultural disintegration among the Ik was grotesque; parents stole food from their children.

To fully exploit its holdings in West Africa, France channeled all trade through Dakar, the westernmost point in Africa. They replaced the logical north-south trade, the economic mainstay of West African life, with east-west routes to feed the port at Dakar and the coffers of French traders.

To profit from their new holdings, the European colonists introduced cash crops such as palm oil, peanuts and cotton. To force Africans to grow these crops, the French instituted "head" taxes payable in French francs. To pay, Africans raised cash crops or performed wage labor. Those cash crops not only diverted labor from the production of subsistence crops, but usurped the best farmland. Subsistence farmers were pushed further north toward the Sahara, and they in turn displaced the pastoralists onto yet worse land. The conversion to cash crops continues today. While Malians starved in the 1970s, Mali's

Jill Cantor

Banoun/Caracciole

Using a big stick for a prod, a Fulani cattleman musters his herd of zebu cattle toward a newly-bored water hole in eastern Niger.

peanut exports jumped 70 percent. Cotton exports increased by 400 percent.

Even many of the most benign-sounding development efforts went awry. The French and English administrations increased the range that herds could graze safely, but ironically reduced the amount of fallow land available for emergencies. Veterinary health campaigns improved animal health and increased herd size, yet the result was greater presssure on the fragile land, erosion and desert encroachment.

Outsiders are now beginning to realize that many West African customs insure against the vicissitudes of life near the desert. Anthropologists now interpret various African cattle distribution methods such as cattle raiding, bride prices, and cattle loans as measures that insure against want and reinforce social relationships.

Cattle raiding, often part of manhood rituals, is the widespread tradition of stealing cattle from neighboring tribes. "We walked for two days, 100 miles, to the Somalis' camp," explained one youth from the shores of Lake Turkana (formerly Lake Rudolph) in northern Kenya. "We wanted to surprise them. The older men pushed us on, but the police knew we were coming and shot at us. We got away with our own herd, but were so thirsty we had to drink their urine on the way back."

The effect of the practice of cattle raiding is to restrict herd size to what one can guard. If one gets too rich, and is unable to watch his herd, someone poorer will steal some animals. The animals also benefit from the increased attention paid them by the owner.

Another common custom is the "bride price" a man pays, often in cattle, to his new relations. Cattle are also loaned to relatives and friends, which reduces the hazards of disease, predation and theft. The Fulani, for example, have developed a system of cattle loans called *habbanae.* In *habbanae,* the owner of a cow loans her out while she has three calves. The calves and milk all belong to the borrower, but the owner gets his cow back.

The tradition of *habbanae* also reinforces relationships among the Fulani. Even rich people are considered poor unless involved in *habbanae.*

It has become obvious that local peoples are often the best source of innovation. In arid northern Kenya, tribespeople have apparently re-invented a method used in Biblical times to prevent rainfall from running off. In order to prevent the first millimeter of rain from clogging the clay soil so that further rain washes it away, they have formed simple V-shaped catchments to collect water and let it sink slowly into the soil.

Agricultural development programs must enhance existing, adaptive strategies of the Sahelian peoples and their cultural storehouse of knowledge. Oxfam America, an independent relief organization based in Boston, Massachusetts, succeeded in using the Fulani's *habbanae* system of cattle loans to restock herds after the early 1970s drought. The plan distributed 900 cattle to herders, who tended them and kept the first three calves. The cows were then returned to the project and sold to pay for other development efforts, and the participants restarted the valuable *habbanae* ties among themselves.

Local peoples need to be involved, both as owners and directors. Drought and famine victims notice problems that planners cannot see from their air-conditioned hotel rooms. "In none of this (development work) are we willing to let the African producer be in charge of his or her own destiny," charges anthropologist James Riddell of the Land Tenure Center in Madison, Wisconsin.

Africa is not a blank slate awaiting the brainstorms of outsiders, and African governments should assess whether traditional land tenure and social systems are preferable to Western or Eastern methods. In 1969, for example, Mali abolished its short experiment with collective farms and restored traditional land tenure arrangements. They promoted simple, cheap measures such as improved seeds, greater extension services, and small-scale water control projects. Rice production per acre increased 33 percent, and in good years Mali again exports rice.

THERE IS NO QUESTION that the Sahel will undergo more droughts, and that pastoral people will bear the brunt of them. "The pastoralists are caught in a vise between increased cash cropping, population growth, political tensions with other groups, desertification and destruction of their traditions," observes desertification researcher Michael Glantz.

But drought does not necessarily mean famine. The solution to the Sahel's woes is far more complex than we wish, but the insights of anthropologists, students of human culture, may point the way to some real solutions. ■

A camel carcass, western Sudan. The Sahel's climate may or may not be changing. If it is, governments will need to put more effort into soil and water conservation and land use planning. If it is not, they will need to do exactly the same thing.

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There were many ironies in the situation. The women needed wood, but other problems — even *including* the problem of taking more time to gather wood — made tree-planting a low priority. Their personal responses to their personal fuelwood gap made it difficult for them to undertake the foresters' national solution to the national wood gap. . . .

It is sometimes assumed that rural people do not know *how* to grow trees. So governments and voluntary agencies launch 'education' campaigns. Indeed, many governments and aid agencies consider that peasants are stupid and ignorant, and that once it is explained to them that they are damaging the environment, they will stop doing so. On the contrary, the African peasant is usually well aware of environmental bankruptcy; what he needs is practical help to escape from circumstances which force him to destroy the environment on which he knows he depends.

Africa in Crisis

If your eyeballs are glazed over from watching Africa on the television news, this will be a welcome book. Pictures on TV can pluck your heartstrings, even open your purse-strings, but they do little to explain causes beyond repeating the word "drought." This book convincingly argues that environmental and economic mismanagement caused the famines in Africa; drought merely triggered the inevitable. It is full of the kind of fine-grained cultural details about the people of Africa that never get taken into account by Western foreign aid packages. For me the most startling revelations in this book are not about how bad the erosion is or how poor the people are, but rather how little the basic functioning of African peasant societies are appreciated by anybody external to them. The scarcest commodity in this crisis is not water or wheat or money — it's intelligence. If you could eat books, this one would feed a lot of people. —*Richard Nilsen*

Africa in Crisis
Lloyd Timberlake
1985; 232 pp.

$6.25 postpaid from:
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The only African nations with a favourable trade balance in late 1984 were five oil exporters: Algeria, Libya, Gabon, Congo and Angola.

Massive gulley erosion, Ethiopian Central Highlands. Such gulleys carry rainwater from the highlands, leaving 'drought' behind.

Africa News

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The great variations in rainfall during the last three decades are not unusual in the Sahel. Scientists believe, in fact, that these extreme shifts in weather have been recurring for several thousand years. By examining the chronicles of traders, the diaries of travelers, and other records, geographers have extended their knowledge of the region's moisture budget back into the colonial period and beyond.

Home Economics

by Wendell Berry

illustrations by Kathleen O'Neill

IF *ECONOMY* MEANS "management of a household" — which is the only thing that it can mean — then we have a system of national accounting that bears no resemblance to the national economy whatsoever; it is not the record of our life at home, but the fever chart of our consumption. Our national economy — the health of which might be indicated by our net national product, derived by subtracting our real losses from our real gains — is perhaps a top secret.

One reason for this is the geographical separation that frequently exists between losses and gains. Agricultural losses occur on the farm and in farming communities, whereas the great gains of agriculture all occur in cities, just as the profits from coal are realized mainly in cities far from where the coal is mined. Almost always the profit is realized by people who are under no pressure or obligation to realize the losses — people who are so positioned by wealth and power that they need assign no value at all to what is lost. The cost of soil erosion is not deducted from the profit on a packaged beefsteak, just as the loss of forest, topsoil, and human homes on a Kentucky mountainside does not reduce the profit on a ton of coal.

If this peculiar estrangement between losses and gains, between products and their real costs, is institutionalized anywhere it is in our ubiquitous word, *resource.* One definition of this word is close to the meaning of the Latin root of the word, *resurgere,* to rise again. In this sense, a resource is a *dependable,* which is to say a constant, supply. A resource, in this sense, rises again as a spring rises, refilling its basin, after a bucket of water has been dipped out. And this is what the topsoil and what the human culture of farming can do under the right "household management," the right economy. They replenish themselves. They are self-renewing. They can last as long as the earth and the sun. The right economy, of course, is right insofar as it respects the source, respects the power of the source to resurge and so does not use too much.

With the efficient unhurriedness of a good farmer, Wendell Berry pauses in the plowing of his Kentucky fields and paces off the borders of a domestic agriculture governed by real worth. In his resonant voice, Berry counts off six fallacies and one misleading definition that need to be uprooted. Used with permission of North Point Press. —*Kevin Kelly*

But there is another, an opposite, definition of resource: "Means that can be used to advantage." That is the definition of the word as we now use it. Now, with us, everything is looked upon as a resource of this kind, even people — the state of Kentucky, for example, now has a Department of Human Resources. With us, a resource is something that has no value until it has been made into something else. Thus a tree has value only insofar as it can be made into lumber. Our schools, which are more and more understood and justified as dispensers of "job training," are thus based on the implicit principle that children have no value until they have been made into employees.

Common sense suggests that it is not possible to make a good thing out of a bad thing. We can see that it is not possible to prepare a good meal from poor food, or to produce good food from poor soil, or to maintain good soil without good farming, or to have good farming without a good culture — a culture that places a proper value on the proper maintenance of the natural sources so that the needed resources are constantly available. We can see, thus, that food is a product both natural and cultural, and that good cooking must be said to begin with good farming. A good economy would value our bodily nourishment in *all* of its transformations from the topsoil to the dinner table — and beyond, for it would place an appropriate value on our excrement too, and would return it to the soil; in a good economy there would be no such thing as "waste," bodily or otherwise. At every stage of its making, our nourishment would be a "finished product" in the sense of being "done with."

We must also notice that as the natural energy approaches human usability, it passes through a declension of forms less and less complex. A potato is less complex than the topsoil, a steak than a steer, a cooked meal than a farm. If, in the human economy, a squash on the table is worth more than a squash in the field, and a squash in the field is worth more than a bushel of soil, that does not mean that food is more valuable than soil. It means simply that we do not know *how* to value the soil. In its complexity and its at least potential longevity, the soil exceeds our comprehension. We do not know how to place a just market value on it, and we are not going to be able to learn how. Its value is inestimable; we must value it, beyond whatever price we put on it, by *respecting* it, by taking good care of it.

The industrial economy, on the other hand, reduces the value of a thing to its market price, and it sets the market price in accordance with the capacity of a thing to be made into another kind of thing. Thus a farm is valued *only* for its ability to produce marketable livestock and/or crops; livestock and crops are valued *only* insofar as they can be manufactured into groceries; groceries are valued *only* to the extent that they can be sold to consumers. An absolute division is thus made at every stage of the industrial process between "raw materials," to which, as such, we accord no respect at all, and "finished products," which we respect only to the extent of their market value. A lot could be said about the quality of the "finish" of these products, but the critical point, here, is that in the industrial economy, value in the form of respect is withheld from the source, and value in the form of price is always determined by reference to a *future* usability; nothing is valued for what it is.

But when nothing is valued for what it is, everything is destined to be wasted. Once the values of things refer only to their future usefulness, then an infinite withdrawal of value from the living present is begun. Nothing (and nobody) can then exist that is not theoretically replaceable by something (or somebody) more valuable. Things of

value begin to be *de*valued. The country that we (or some of us) had thought to make our home becomes instead "a nation rich in natural resources." The good bounty of the land begins its mechanical metamorphosis into junk, garbage, silt, poison and other forms of "waste."

In such an economy, no farm or any other usable property can safely be regarded by anyone as a home. No home is ultimately worthy of our loyalty. Nothing is ultimately worth doing. No place or task or person is worth a lifetime's devotion. That "waste," in such an economy, should include several categories of humans — the unborn, the old, "disinvested" farmers, the unemployed, the unemployable — is simply inevitable. Once our homeland, our source, is regarded as a "resource," we are all sliding downward toward the ashheap or the dump.

II.

If in agriculture we replace the standard of *productivity* with that of *constant supply,* and think of the farm land and the farm people as resources in the sense of their ability to rise and replenish themselves again and again, then a number of dangerous and widely credited fallacies become apparent. I want to talk now about six of these:

1. *That agriculture may be understood and dealt with as an industry.*
This is false, first of all, because agriculture deals with living things and biological processes, whereas the materials of industry are not alive and the processes are mechanical. That agriculture can produce only out of the lives of living creatures means that the farmer is necessarily a nurturer, a preserver of the health of creatures.

Second, whereas a factory has a limited life expectancy, the life of a healthy farm is unlimited. Buildings and tools wear out, but the topsoil, if properly used and maintained, will not wear out. Some agricultural soils have remained in continuous use for four or five thousand years or more.

Third, the motives of agriculture are fundamentally different from the motives of industry. This is partly accounted for by the differences between farming and industry that I have already mentioned. Another reason is that, in our country and many others, the best farms have always been homes as well as work places. Unlike factory hands and company executives, farmers do not *go* to work. A good farmer is *at* work even when at rest. Over and over again, experience has shown that the motives of the wage earner are inadequate to farming. American experience has shown this, but is perhaps nowhere so dramatically demonstrated as in Soviet Russia, where small privately-farmed plots greatly outproduce the communal fields.

And, finally, the economy of industry is inimical to the economy of agriculture. The economy of industry is, typically, an extractive economy. It takes, makes, uses, and discards. It progresses from exhaustion to pollution. Agriculture, on the other hand, rightly belongs to a replenishing economy that takes, makes, uses, *and returns.* It involves the return to the source, not just of fertility, of so-called "wastes," but of care and affection. Otherwise, the topsoil is used exactly as a mineable fuel and is destroyed in use. Thus, in agriculture, the methods of the factory give us the life expectancy of the factory — long enough for us, perhaps, but not long enough for our children and grandchildren.

2. *That a sound agricultural economy can be based on an export market.*
We should begin, I think by assuming that a sound economy cannot be based on *any* market that it does not control.

And we should assume, further, that any foreign market for food *ought to be* temporary, and therefore, by definition, not dependable. The best thing for any nation or people, obviously, is to grow its own food, and therefore charity alone would forbid us to depend on or to wish for a permanent market for our agricultural products in any foreign country. And we must ask too whether or not charity can ever regard hungry people as "a market."

But the commercial principle itself is unsafe if it is not made subject to other principles. One of the principles that should everywhere condition the commercial principle in agriculture is that of subsistence. Commercial farming, that is, must never be separated from subsistence farming. The farm family should live from the farm. Just as the farm should be, so far as possible, the source of its own fertility and operating energy, so it should be, so far as possible, the source of food, shelter, fuel, building materials, etc., for the farm family. Thus the basis of the livelihood of the farming population is assured. In times such as these, when costs of purchased supplies are high and earnings from farm produce low, the value of whatever the farm family produces for itself is high and involves substantial savings. What is exported from the farm, in whatever quantity, is properly regarded as surplus — not needed for subsistence.

But the subsistence principle should operate at every level of the agricultural system. The local consumer population in towns and cities should subsist, so far as possible, from the produce of the locality or region. The primary reason for this, in the region as on the farm, is that it is safe, but there are other reasons also. It would tend to diversify local farming. It would support the local farm economy. It would greatly reduce transportation and other costs. It would put fresher food on the table. It would increase local employ-

ment. And what would be exported from the region would, again, be regarded as surplus.

The same principle would then apply to the nation as a whole. We should subsist from our own land, and the surplus would be available for export markets, or for charity in emergencies.

The surplus should not be regarded as merely incidental to subsistence but as equally necessary for safety — a sort of "floating" supply usable to compensate for both differences and vagaries of climate. Because of drouths, floods, and storms, no farm or region or even nation can be forever assured of a subsistence, and it is only because of this that an exportable surplus has a legitimate place in agricultural planning.

3. *That the "free market" can preserve agriculture.* The "free market" — the unbridled play of economic forces — is bad for agriculture because it is unable to assign a value to things that are necessary to agriculture. It gives a value to agricultural products, but it cannot give a value to the sources of those products in the topsoil or the ecosystem or the farm or the farm family or the farm community. Indeed, people who look at farming from the standpoint of the "free market" do not understand the relation of product to source. They believe that the relation is merely mechanical, because they believe that agriculture is or can be an industry. And the "free market" is helpless to suggest otherwise.

The "free market" values production alone. And this exclusive emphasis on production, in agriculture, inevitably causes overproduction. In agriculture, both high prices and low prices cause overproduction. But overproduction leads only to low prices, never to high prices. It could perhaps be said, then, that on the "free market" agricultural productivity has no direct or stable relation to value.

When this is so, agriculture overproduces, and the surplus is used as a weapon against the producer to beat down prices, either in the service of a "cheap food policy" for domestic consumers, or to make our agricultural produce competitive in world trade.

In a time when urban investment in agriculture ("agribusiness") stimulates a higher productivity than the urban economy can provide a market for, then the rural economy can be protected only by controlling production. Supplies should be adjusted to anticipated needs, and those needs should always include surpluses to be used in case of crop failure. Such an adjustment can be only approximate, of course, but since we are dealing with an annual productivity, yearly corrections can be made. Thus the sources of production can be preserved by preventing runaway surpluses and the consequent low markets that destroy both people and land.

The "free market" is economic Darwinism, with

one critical qualification. Whereas the Darwinian biologists have always acknowledged the violence of the competitive principle, the political Darwinians have been unable to resist the temptation to suggest that, on the "free market," *both* predator and prey are beneficiaries. When economic ruin occurs, according to this view, it occurs only as a result of economic justice. Thus Mr. David Stockman could suggest that the dispossession of thousands of farm families is merely the result of the working of "a dynamic economy," which compensates their losses by "massive explosions of new jobs and investments . . . occurring elsewhere, in Silicon Valley." That these failures and successes are not happening to the same people, or even to the same groups of people, is an insight beyond the reach of Mr. Stockman's equipment. By his reasoning it may readily be seen that the poverty of the poor is justified by the richness of the rich.

The "free market" idea is the result of a lazy (when not felonious) wish to found the human economy on natural law. The trouble with this is that humans are not *of* nature in the same way that foxes and rabbits are. Humans live artificially, by artifice and by art, by human making, and economics will finally have to be answerable to this. Unbridled economic forces damage *both* nature and human culture.

There are, I suggest, two *human* laws of economics, very different from the laws, both unnatural and inhuman, that govern the "free market":

- Money must not lie about value. It must not, by inflation or usury, misrepresent the value of necessary work or necessary goods. Those values must not, by any devices of markets or banks, be made subject to monetary manipulation.

- There must be a decent balance between what people earn and what they pay, and this can be made possible only by control of production. When farmers have to sell on a depressed market and buy on an inflated one, that is death to farmers, death to farming, death to rural communities, death to the soil, and (to put it in urban terms) death to food.

4. *That productivity is the only necessary standard of production.*
By and large, the most popular way of dealing with American agricultural problems has been to praise American agriculture. For decades we have been wandering in a blizzard of production statistics pouring out of the government, the universities, and the "agribusiness" corporations. No politician's brag would be complete without a tribute to "the American farmer" who is said to be singlehandedly feeding 57 or 75 or God knows how many people. American agriculture is fantastically productive, and by now we all ought to know it.

That American agriculture is also fantastically expensive is less known, but is equally undeniable, even though the costs have not yet entered into the official accounting. The costs are in loss of soil, in loss of farms and farmers, in soil and water pollution, in food pollution, in the decay of country towns and communities, and in the increasing vulnerability of the food supply system. The statistics of productivity alone cannot show these costs. We are nevertheless approaching a "bottom line" that is not on our books.

From an agricultural point of view, a better word than *productivity* is *thrift.* It is a better word because it implies a fuller accounting. A thrifty person is undoubtedly a productive one, but thriftiness also implies a proper consideration for the means of production. To be thrifty is to take care of things. It is to thrive — that is, to be healthy by being a part of health. One cannot be thrifty alone. One can only be thrifty insofar as one's land, crops, animals, place, and community are thriving.

The great fault of the selective bookkeeping we call "the economy" is that it does not lead to thrift. Day by day, we are acting out the plot of a murderous paradox: an "economy" that leads to extravagance. Our great fault as a people living in this economy is that we do not take care of things. Our economy is such that we say we "cannot afford" to take care of things. Labor is expensive, time is expensive, money is expensive, but materials — the stuff of Creation — are so cheap that we cannot afford to take care of them. The wrecking ball is characteristic of our way with materials. We "cannot afford" to log a forest selectively, or to mine without destroying topography, or to farm without catastrophic soil erosion.

A production-oriented economy can indeed live in this way — but only so long as production lasts.

Suppose that, foreseeing the inevitable failure of this sort of production, we see that we must assign a value to continuity. If that happens, then our standard of production will have to change, indeed will already have changed, for the standard of productivity alone cannot assign a value to continuity. It cannot permit us to see that continuity *has* a value. The value of continuity is visible only to thrift.

5. *That there are too many farmers.*
This has been accepted doctrine in the *offices* of agriculture — in governments, universities, and corporations — ever since World War II. Its history is a remarkable proof of the influence of an idea. In the last forty years this idea has supported, if indeed it has not caused, one of the most consequential migrations of history: millions of rural people moving from country to city in a stream that has not slackened from the war's end until now. And the motivating force behind this migration, then as now, has been economic ruin on the

farm. Today, with hundreds of farm families losing their farms every week, the economists are still saying, as they have said all along, that these people deserve to fail, that they have failed because they are the "least efficient producers," and that America is better off for their failure.

It is apparently easy to say that there are too many farmers, if one is not a farmer. This is not a pronouncement often heard in farm communities. Nor have farmers yet been informed of a dangerous surplus of population in the "agribusiness" professions, or among the middlemen of the food system. No agricultural economist has yet perceived that there are too many agricultural economists.

The farm-to-city migration has obviously produced advantages to the corporate economy. The absent farmers have had to be replaced by machinery, petroleum, chemicals, credit and other expensive goods and services from the "agribusiness" economy, which ought not to be confused with the economy of what used to be called farming.

But these short-term advantages all imply long-term disadvantages to both country and city. The departure of so many people has seriously weakened rural communities and economies all over the country. And that our farmland no longer has enough caretakers is implied by the fact that as the farming people have departed from the land, the land itself has departed. Our soil erosion rates are now higher than they were during the Dust Bowl.

At the same time, the cities have had to receive a great influx of people unprepared for urban life and unable to cope with it. A friend of mine, a psychologist who has frequently worked with the juvenile courts in a large midwestern city, has told me that a major occupation of the police force there is to keep the "permanently unemployable" confined in their own part of town. Such a circumstance cannot be good for the future of democracy and freedom. One wonders what the authors of our Constitution would have thought of that category, "permanently unemployable."

Equally important is the question of the sustainability of the urban food supply. The supermarkets are, at present, crammed with food, and the productivity of American agriculture is, at present, enormous. But this is a productivity based, at present, on the ruin both of the producers and of the source of production. City people are unworried about this, apparently, only because they do not know anything about farming. People who know about farming, who know what the farmland requires to remain productive, *are* worried. When topsoil losses exceed the weight of grain harvested by five times (in Iowa) or by twenty times (in the wheatlands of eastern Washington) there is something to worry about.

When the "too many" of the country arrive in the city, they are not called "too many." In the

city they are called "unemployed" or "permanently unemployable."

What will happen if the economists ever perceive that there are too many people in the cities? There appear to be only two possibilities: Either they will have to recognize that their earlier diagnosis was a tragic error, or they will conclude that there are too many people in country and city both — and what further inhumanities will be justified by *that* diagnosis?

Both parties to our political dialogue seem to have concluded long ago that the dispossession and disemployment of people by industrial growth are normal and acceptable. The liberals have wished to support these people with welfare giveaways. The conservatives have instructed them to become ambitious and get jobs. Both are ways of telling the underprivileged to go to hell — the only difference being in the speed with which they are advised to go.

6. *That hand labor is bad.*
This, too, is accepted doctrine, and it will be found to be one of the chief supports of the doctrine that there are too many farmers. The forced migration of farmers from the farm will be easier on the general conscience if it can be supposed that bankruptcy and dispossession are ways of *saving* farmers from work that is beneath their dignity.

We can only assume that we are faced with an unquestioned social dogma when so astute a writer as Jane Jacobs can say without blinking that, "Cotton picking by hand is miserable labor; driving a cotton picker is not." A great many questions would have to be asked and answered before this assertion could be allowed to stand.

Wes Jackson is certainly right in his insistence that the pleasantness or unpleasantness of farm work depends upon scale — upon the size of the field and the size of the crop. But also we obviously need to know who owns the field. We would need to know the experience and the expectations of the workers. We would need to know about the skill of the workers and the quality of the work. After consideration of such matters, we can say that probably *any* farm work is miserable, whether done by hand or by machine, if it is economically desperate — if it does not secure the worker in some stable, decent, rewarding connection to the land worked. We can say that hand work in a small field owned by the worker, with the expectation of a decent economic return, is probably less miserable than mechanized work in somebody else's large field. We can suppose with some confidence, moreover, that hand work in the company of family and neighbors might be less miserable than work done alone in the unrelieved noise of a machine.

The fact remains, of course, that millions of hand workers have been and are being replaced by machines, and that the farmers now losing their farms are to some extent being so replaced. Many people apparently assume that this process of "labor saving," the substitution of machines for people, can continue indefinitely, and to the unending betterment of the human lot. Even so, we must continue to ask about the possible necessity, the possible goodness, and the possible inescapability, of hand work.

My own suspicion is that, especially for the private owners of small properties such as farms, hand work may become more necessary as petroleum and other "industrial inputs" become more expensive. Increasingly too, I think, farmers will find it necessary to substitute their own hand labor, in such work as carpentry and machinery repair, for more expensive city labor.

But I suspect also that a considerable amount of hand work may remain necessary for reasons other than economics. It will continue to be necessary in the best farming, because the best farming will continue to rely on the attentiveness and particularity that go with the use of the hands. Animal husbandry will continue to require the use of the hands. So, I think, will much of the work of land restoration, and we are going to have a lot of that to do.

Judging from our epidemic of obesity and other diseases of sedentary life, and from the popularity of the various strenuous employments of the "physical fitness movement," the greatest untapped source of useable energy may now be in human bodies. It may become the task of a future economy to give worthy employment to this energy and reward its use. ■

You Can Have a Baby

With an estimated one out of ten Americans suffering from infertility, chances are you know someone trying to get pregnant and failing month by month. Give them ***You Can Have a Baby*** *and they might name the kid after you! A great source of basic information about what infertility is and how to overcome it. In a factual, not frightening, way, it tells you when to seek medical help and what to expect at the office of your local infertility specialist.*

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—Janna Katz

Fifty percent of the time the problem is the male's. This covers male infertility nicely. *—Kevin Kelly*

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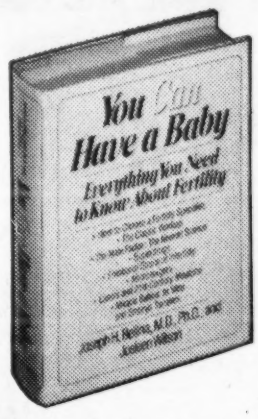

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Women who smoke have a 25 percent greater chance of aborting than nonsmokers. Chronic smoke inhalation prevents oxygen from getting from the lungs through the blood and to the baby. As a result, the fetus is deprived of oxygen during its critical growth phase.

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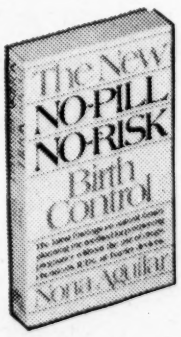
The length of time a woman stays on the pill doesn't seem to affect the recovery of the hormonal axis. But erratic use does. A woman can take the pill indefinitely with little risk to her fertility if she uses it consistently, stopping only when she wants to get pregnant. When a woman initially takes the pill, the brain control center is shocked. Stopping and starting the pill repeatedly jerks the system on and off, until it loses its buoyancy. After such a series of shocks, treatment with fertility drugs can usually help the ovulatory system start up again.

The New No-Pill, No-Risk Birth Control

At first glance, natural family planning sounds like my idea of the "perfect contraceptive": it's safe, completely natural, and nearly 100 percent effective. So why isn't everyone using it? Maybe because they haven't read Nona Aguilar's recently-updated book. To be sure, natural family planning isn't for everyone. For all the benefits described in this book, not everyone is ready for the required periods of sexual abstinence and meticulous charting of daily fertility signs. But for couples in search of an ideal birth control method, this guide has a lot to offer. There is excellent instruction on every aspect of the method, sensitive advice, resources, and a lot of encouragement. Interviews with couples using the method give real motivation and even show the positive side of abstinence. And for those of us not quite ready to relinquish our pills, IUD, or barrier method, the techniques of charting described in this book can give clues to our own hidden fertility. *—Janna Katz*

The New No-Pill, No-Risk Birth Control
Nina Aguilar
1986; 240 pp.
$9.95
postpaid from:
Rawson Associates
115 Fifth Avenue
New York, NY 10003
or Whole Earth Access



•

I used to think of my fertility as being something like a slimy green monster lurking in a dark closet, ready to strike with a pregnancy at any time. For years I felt helpless against the "monster" unless I was "armed" with the most powerful contraceptives on the market. What a sad, pathetic view to have held for so many years!

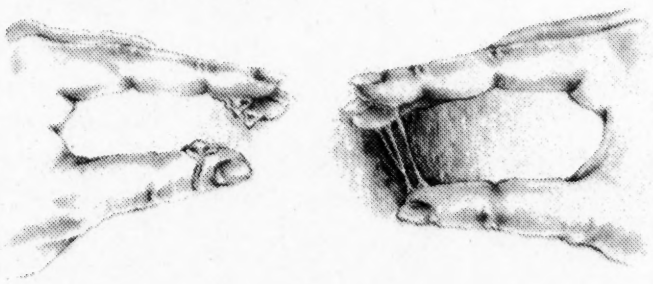
•

The event of ovulation occurs during a very narrow time frame — twenty-four hours or less — and sperm cells survive less than five days in the woman's reproductive tract. When the sperm's estimated (maximum) survival time of five days is combined with the woman's single day of fertility, then there are less than six days out of every cycle that lovemaking can cause pregnancy. Six days — barely 20 percent of the average cycle — that's all!

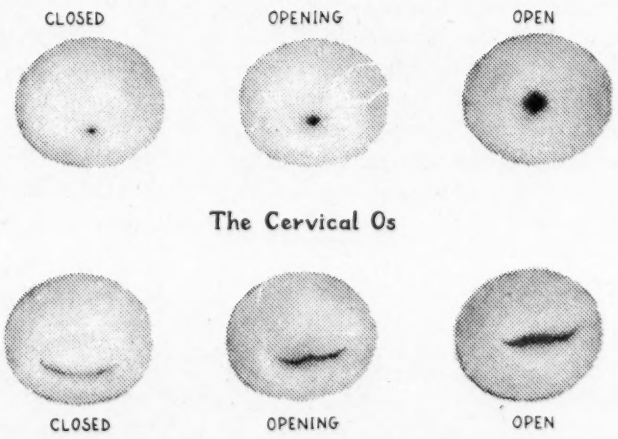
•

. . . The reward is *fertility control equivalent to the best interventive methods* (like sterilization and the Pill) but with *no* health risks. . . .

The three fertility changes that can be monitored are:
- The changes in cervical mucus secretions
- The fluctuations of the basal body temperature
- The alterations of the cervix



Peak mucus feels slippery on the external genitals and can be stretched up to ten inches between the fingers. You are fertile!



The top row shows the dimplelike appearance of your cervix if you have not delivered a child vaginally. The bottom shows its slitlike appearance if you have had a vaginal delivery. The cervices on the extreme left indicate infertility because they are closed; those on the extreme right are open and so indicate fertility.

NOT AN EASY CHOICE

A FEMINIST REEXAMINES ABORTION

by
Kathleen McDonnell

When true believers tell each other, "You shouldn't air those issues in public," then you know you've got a dead crusade, or a new cause. The mail will tell us which. A Canadian author of three plays, and mother of one young daughter, Canadian Kathleen McDonnell writes extensively on women's health issues. —*Kevin Kelly*

ABORTION IS AN ISSUE THAT REFUSES TO GO AWAY, AND THAT continues to generate strong feelings on all sides. It has had its ebbs and flows over the years, surfacing in one place, dying down in another. Each time, it reappears with the same intensity, the same high emotional pitch. Unlike many other issues that meet initial resistance and become slowly more acceptable with the passage of time, abortion never seems to "cool down." Many pro-choicers are mystified by this. The idea of abortion rights seems so straightforward. It is the Right-to-Lifers, the opponents of choice, who are making all the fuss, as we see it, and if they would just go away, abortion could finally be dealt with in a sane, rational manner.

It is possible that by projecting all the emotionalism of the abortion debate onto one side, we are missing something important. For the Right-to-Life position gives expression to some aspects of the abortion issue that are shared by many people who don't necessarily think of themselves as Right-to-Lifers. There is a great "mushy middle" made up of people who have opted out of the abortion debate. Many of these are women who have had abortions themselves. Many others are the lovers, parents, or friends of women who have had abortions. We need to ask *why* these people have opted out. Why don't they come out and take action to ensure that the option that was available to them when they needed it continues to be available to themselves and others?

There is something in the character of the abortion issue that does not let it just go away. We can't fight back and demand our right to abortion or anything else unless we feel sure in our own minds that what we are demanding is just, is right, is our due. But for most people, even women who have had abortions (perhaps *especially* women who have had abortions), abortion doesn't elicit anything like such clarity. Nobody *likes* abortion. The right to have one cannot be fought for with the same zest as the right to equal pay or universal day care. And, for most women in our society, abortion is still a dark secret, a source of shame.

In fact, what abortion inspires more than anything else is a profound ambivalence, which finds a particular expression in women. And when we look at the two poles of the abortion debate, we see also the two poles of

our ambivalence expressed in an almost crystallized form. On the one hand, there is the pro-choice position, which is identified with feminism, with women's right to self-determination. On the other, there is the anti-choice position, which is largely identified with the traditional view of women as vessels, as mothers, as nurturers. In our espousal of abortion rights, feminists have spoken eloquently to the former. Our very rhetoric expresses our belief in our right to "control of our bodies, control of our lives." We project an image of strength, of self-affirmation. But in doing so, have we left something out? Is there a dimension of women's experience of abortion that we have not adequately addressed?

INTEGRATING AMBIVALENT FEELINGS

It is the hidden face of the abortion issue, this deep-rooted ambivalence, that we must look at squarely and integrate into our political stance if it is to reflect women's actual experience of abortion. It is a basic tenet of feminism, and a groundbreaking insight for all social revolutions, that the personal is political. What we *feel* matters just as much as what we *think*. What happens in our day-to-day lives has as much importance as what happens at political meetings or in the corridors of power. While we have acknowledged much of our ambivalence among ourselves, in the privacy of our kitchen table conversations, we have largely refrained from talking about it publicly, disturbed that it does not appear to jibe with our stated public position on abortion, and fearful of how our opponents might use it against us. But discounting our feelings and our experience in deference to some "correct line" is not what feminism is all about.

Indeed, in recent years a growing number of women, many long-time feminists and pro-choice activists, have been "coming out of the closet" to talk about their ambivalence and the complex web of feelings they have about abortion.

First, women's experience of abortion is currently not being addressed and integrated into the way we talk politically about the issue. Many feminists have long acknowledged privately that having an abortion is not the straightforward exercise it sometimes appears to be in our leaflets and slogans. Many women feel alienated from the women's movement precisely because they don't see these feelings discussed or validated. The Right-to-Life movement is talking about them, however, and is active in offering support services for women experiencing post-abortion grief or doubt. But feminists are the ones who should be talking to these women. We are the ones who can offer them real support and validation around their abortion experience.

NOBODY *likes* abortion. The right to have one cannot be fought for with the same zest as the right to equal pay or universal day care.

CONCEIVING A FEMINIST MORALITY

Second, we are not reaching the great middle ground of people who have moral qualms about abortion. These are not the confirmed anti-abortionists, but people who simply feel that abortion does have a moral dimension that they don't see being addressed in the feminist stance. They may support a woman's right to choose abortion, but still hold back from full support of the feminist position for reasons they often cannot articulate. What many of these people need is simply the reassurance that feminists are as aware and concerned about the moral dimension of abortion as they are, that we don't regard it as a simple surgical procedure.

The feminist response to the idea of abortion as a moral problem has been an ambivalent one. Feminists and other progressives are traditionally uncomfortable with the whole notion of "morality." They view it as an essentially conservative, religious concept that has been used to bolster traditional modes of thinking and behavior and to undermine efforts at political and social change. Some pro-choice advocates deny that abortion is a moral issue at all. A favourite slogan for a time in the pro-choice movement was "Abortion is a health issue, not a moral issue." We have used this idea to argue that abortion should be treated in the same way as any other medical procedure and should not be controlled by criminal law. But by and large, feminists have not accepted the notion that abortion is the moral equivalent of a tonsillectomy. We sense there is more to it than that, but we have not known how to come to grips with it without giving ammunition to our opponents.

Can we conceive of such a thing as a "feminist morality" of abortion? What would it look like? At its root, it would be characterized by the deep appreciation of the complexities of life, the refusal to polarize and adopt simplistic formulas, described by Carol Gilligan as the great strength of women's moral development. It would not be a mere relativism that rejects wholesale the idea of general moral principles, or that cynically denies the possibility or necessity of moral choice because "everything is relative."

A true feminist morality would strive to root the traditional Western commitment to abstract principles of "right" and "wrong" in the firm ground of our tangible, day-to-day existence. It would begin by reaffirming one of the most basic principles of feminism, that women have the right to control our bodies and to choose when, how, and whether we will have children. At the same time it would lead us to acknowledge that we are not each an island unto ourselves, that our rights and our choices exist in an intricate web of interdependence with others and with the rest of life. One of the inherent limitations of an ethic based solely on "rights" — whether it be the fetus's "right to life" or women's right to control our bodies — is that it is one-dimensional. It assumes that we are all, in some sense, atomized individuals with competing rights, rather than beings whose very existence is rooted in profound interconnections with each other. It is with this understanding of our interdependence that we can make the courageous leap of "letting in" the fetus, of rejecting the idea that it is simply a clump of cells, of taking it into our moral accounting and allowing it to make some claim on our attentions. Doing so does *not* inevitably lead us into the trap of concluding that the "rights" of the fetus outweigh our own, or that it is immoral for women to say "yes" to ourselves and "no" to carrying a particular fetus to term at a particular time. But it does lead us to look seriously at the whole question of fetal life. The "right of the fetus" may not be the only, or even the main consideration in the abortion issue, as anti-abortionists insist. But it is an aspect that demands to be addressed.

WE are not each an island unto ourselves; our rights and our choices exist in an intricate web of interdependence with others.

What this acknowledgement of the right of the fetus leads us to is a profound taking of responsibility for our choices, for the fact that we have, with full consciousness, terminated life. This is most emphatically *not* the same as blaming ourselves or burdening ourselves with an unnecessary load of guilt. It means, as one feminist who experienced post-abortion grief put it, "not denying that there was something alive in you, and that you ended the process."

Ultimately what we are talking about is an acknowledgement of the seriousness of abortion, an understanding that it is a choice that cannot be made lightly. The potential trap, of course, lies in defining what is a "serious" enough reason to have an abortion. Most Right-to-Lifers believe that only a threat to the life of the mother is sufficient justification, and they claim that most women seek abortions for essentially "trivial" reasons. But in our honest appraisal of our own and other women's lives, we know this is not the case. That we cannot cope with another child, that we are not ready for parenthood, that we cannot face raising a child without a partner, that we cannot afford a child, that our method of birth control failed, that we are the victims of rape, that we cannot bear the anguish of carrying a child to term and giving it up for adoption, that we cannot accept the responsibility of caring for a handicapped child — these are the reasons why we seek abortion in the vast majority of cases. Far from being trivial, they are dilemmas of great consequence that affect our ability to be who we are and to live our lives with any degree of control over our circumstances. If abortion is, as Bernard Nathanson has said, an "inexpressibly serious matter," so, too, are the life circumstances that lead us to choose it.

ADVANCING WITH TECHNOLOGY

Third, developments in medical technology are radically changing the nature of the abortion debate. Our expanding knowledge of fetal physiology and psychology makes it more and more difficult to simply dismiss the fetus in the abortion discussion. The fetus is literally becoming a "patient" while still in the womb, the recipient of surgery and other therapeutic techniques at gestational ages well before the cutoff point for abortion. Advances in genetics and prenatal diagnosis are making abortion on eugenic grounds, as

opposed to the social, economic, and psychological grounds stressed by feminists, more and more common. How does this kind of selective abortion of "defective" fetuses fit in with our right to choose? New developments in abortion technology itself are impinging on the abortion debate, making it increasingly difficult to define precisely what an abortion is. Induced abortions are now usually performed some time after the sixth week of pregnancy, since it is difficult to accurately diagnose pregnancy prior to that time. A whole new range of "interceptors" — drugs or devices that intervene in the reproductive process *after* conception — is under development. Interceptors cannot readily be classified as either contraceptives or abortifacients: they do not prevent conception, but they terminate a pregnancy long before it can be verified, often prior to implantation of the embryo on the uterine wall. Many fertility experts consider implantation rather than conception to be the starting point of pregnancy, since they estimate that in the natural course of events nearly half of all fertilized eggs fail to implant and are expelled from the uterus. Interceptors are already in common use. The morning-after pill is one; so is the IUD, which is thought to produce a uterine environment hostile to the implantation of a fertilized egg. In light of all this, what, then, is abortion? And how will we integrate these ever-expanding developments into our understanding of it?

It is the Right-to-Life movement that is working at the cutting edge of bioethical issues that feminists and progressives have barely begun to address, issues that will increasingly dominate the politics of the rest of the twentieth century and beyond. Their solutions are for the most part wrong-headed and simplistic, but they are asking what is to many minds the right question: Is life of value in itself? For it is not much of a leap from that abstract question to: Is *my* life of any value? And that connection is made explicitly in anti-abortion literature and in media images. If "they" can discard unborn children, maybe even handicapped infants and old people, what's to stop them from discarding you or me? In a society where feelings of worthlessness and powerlessness are epidemic, such an approach has a powerful, if largely unconscious, appeal. What Right-to-Life ideology does so effectively is embrace all the most "disposable" elements of society and validate them. To the elderly, to the disabled, to the fetus, it says, "You are worthwhile, for yourself alone." Of course, most of us know, rationally, that we are not in danger of being "liquidated," but the sense of identification is there nonetheless. They — the fetuses, the handicapped babies and old people — are "nonpersons" and so am I.

> If abortion is, as Bernard Nathanson has said, an "inexpressibly serious matter," so, too, are the life circumstances that lead us to choose it.

The appeal of the anti-abortion movement is powerful and complex, but on every level it speaks to genuine fears — fear of change, fear of liberated sexuality, fear of ambiguity and complexity, fear that life has no value, fear of female autonomy. As a movement, it shows no sign of fading away. Although it has been and still remains largely a fringe phenomenon, it has always had an impact beyond its numbers precisely because of its altruistic, "guardian of the fetus" stance. Most people in our society don't go to anti-abortion rallies (or pro-choice rallies, for that matter), but many have nagging doubts about abortion. For these people the Right-to-Life may serve as a kind of conscience, a reference group of individuals who are seen as having their "hearts in the right place" and who are "not afraid to stand up for what they believe in."

MAKING ROOM FOR MEN

Fourth, men are beginning to take on a greater role in every aspect of reproduction and parenting. A few men, backed up by the Right-to-Life movement, are beginning to talk about men's rights in abortion, and argue for male veto power.

Though feminism has never actually worked out a position on the role of men in abortion, in practice we have designated only one appropriate role for them, that of the "supportive man." In this scenario, the man is to provide emotional support to a woman facing an unwanted pregnancy and to help her carry out her choice, whatever it may be. In fostering this role we may give men the message, intentionally or not, that they should put aside whatever feelings and preferences they might have and just "be there" for the woman. Some progressive, "feminist" men, who are sympathetic to the goals of the women's movement and who in many cases actively work to support them, have particularly gravitated

toward this role in their relationships with women. (A lot of other men are, of course, not so cooperative!) So, to a large extent, what we have encouraged in men is a passive, auxiliary role in abortion, allowing them to participate in a way that is helpful, but perhaps not, in some important sense, truly meaningful. Perhaps this is just what we want. Abortion is, after all, a woman's choice.

But there is a problem here. In every other area of reproduction we are encouraging just the opposite behavior in men: we want them to take equal responsibility for contraception. We want them to be actively and intimately involved in every aspect of pregnancy, labour and delivery. And we want them to take an active, equal role in child care and parenting. We have fostered this trend toward greater male participation with some ambivalence, always remembering men's oft-demonstrated tendency to try to take control in reproductive and other matters. But in the end we recognize that we must do so if we want to eradicate coercive sex roles. By encouraging male participation in all aspects of reproduction and parenting we chip away at the notion that bearing and caring for children is a woman's "natural" function in life, that a woman's place is in the home, and a man's is out in the world. We also make a true and equal partnership in childbearing and parenting a real possibility for women and men.

We have to acknowledge, then, that there is a grave inconsistency between our eagerness to involve men in all other aspects of reproduction and our unwillingness to allow them a similar role in abortion. This means we must acknowledge and validate men's role in the act of procreation. It really does take two. This isn't to suggest that men's and women's parts in creating life are somehow equivalent, as some maintain. They obviously are not. Nature involves women in the reproductive process in a total physical and emotional way. We go through pregnancy, labour, birth, postpartum and breastfeeding, with all their attendant physical, hormonal and psychological changes. By contrast, nature does not even provide us with a sure way of verifying which man has fathered which child. But, if we are serious in our efforts to, in a sense, right nature's imbalance and make reproduction a truly joint effort, it behooves us to make more room for men in the abortion process, to allow them a meaningful role that acknowledges their part in procreation.

FACING THE CONTRADICTIONS

Finally, some feminists are beginning to perceive a dissonance between our stance on abortion and our stance in other areas. Feminism has tended to ally itself with nonviolence, with justice for the oppressed, with nurturance and respect for life and for the ecosystem. Yet abortion is in some sense an act of violence and indisputably results in the termination of life. Is there a contradiction here? Possibly. It depends as much on how we define our feminism as it does on how we view abortion. For how much are these "nurturant" qualities a fundamental part of feminism? Some see them as an actual threat to feminism and to women's autonomy — the old idealized Mother Earth figure served up in a new but still oppressive guise. Others argue that the real task of feminism is to reclaim and validate these nurturant aspects rather than to embrace patriarchal, male-defined values. The more we delve into these questions, the more contradictions we find, but that need not frighten us. Life is full of contradictions, and facing them squarely and honestly can lead us to a new and deeper synthesis of our values and beliefs.

Is a reevaluation of the feminist position on abortion really needed? Many feminists, including many active in the abortion rights struggle, would say no, because the issue is still essentially the same: the need for women to control our own bodies and our reproductive capacity, so that we can achieve full liberation as human beings. And of course they are right. On some level the struggle is and will continue to be exactly the same, until we have achieved real reproductive freedom. Others may argue that this is not the time to introduce new, potentially divisive elements into the feminist discussion of abortion, because we must pull together to combat the rise of the Right and a growing antifeminist backlash. They are right, too. We do take a risk if we open up the agenda on abortion. Much like the current debate on pornography and the role of censorship, reexamining abortion holds the fearful possibility of splitting the women's movement and giving ammunition to our enemies.

But the most persuasive argument in favour of opening up the abortion agenda is simply that it is already happening. Larger developments in society are having a direct effect on the abortion issue and are demanding to be taken into the feminist account. If we ignore them we run the even greater risk of becoming rigid, stagnant, and, ultimately, irrelevant. ■

This essay was excerpted from a book by the same title, Not An Easy Choice, *reprinted with permission of Women's Press, 16 Baldwin St., Toronto, Ontario, Canada M5T 1L2. The book devotes a chapter to each argument. It is available in the U.S. from South End Press, 116 St. Botolph St., Boston, MA 02115 ($9.50 postpaid).*

Not Killing

by Robert Aitken

I DO NOT HOLD to the perfectionistic position that before one can work for the protection of animals, forests, and small family farms — or for world peace — one must be completely realized, compassionate, and peaceful. There is no end to the process of perfection, and so the perfectionist cannot even begin Bodhisattva work. Compassion and peace are a practice, on cushions in the dojo, within the family, on the job, and at political forums. Do your best with what you have, and you will mature in the process.

There are many personal tests of this practice, from dealing with insects and mice to questions about capital punishment. Perhaps the most intimate and agonizing test is faced by the woman considering abortion. Over-simplified positions of pro-life and pro-choice do not touch the depths of her dilemma. Usually she experiences distressing conflict between her sexual/reproductive drive and the realities of her life: social, economic, and personal — and indeed, she faces such realities for any child she may bring to term.

I have known women who said they were not upset at having an abortion, but I would guess that they were not sensitive to their own feelings at that particular time. Perhaps distress shows up in their dreams. Surely self-awareness is never more important.

Sitting in on sharing meetings in the Diamond Sangha, our Zen Buddhist society in Hawaii, I get the impression that when a woman is sensitive to her feelings, she is conscious that abortion is killing a part of herself and terminating the ancient process, begun anew within herself, of bringing life into being. Thus she is likely to feel acutely miserable after making a decision to have an abortion. This is a time for compassion for the woman, and for her to be compassionate with herself and for her unborn child. If I am consulted, and we explore the options carefully and I learn that the decision is definite, I encourage her to go through the act with the consciousness of a mother who holds her dying child in her arms, lovingly nurturing it as it passes from life. Sorrow and suffering form the nature of samsara, the flow of life and death, and the decision to prevent birth is made on balance with other elements of suffering. Once the decision is made, there is no blame, but rather acknowledgement that sadness pervades the whole universe, and this bit of life goes with our deepest love.

In Japanese Buddhism, there is a funeral service for the *mizuko* ("water baby," the poetical term for fetus). Like any other human being that passes into the One, it is given a posthumous Buddhist name, and is thus identified as an individual, however incomplete, to whom we can say farewell. With this ceremony, the woman is in touch with life and death as they pass through her existence, and she finds that such basic changes are relative waves on the great ocean of true nature, which is not born and does not pass away.

All excerpted from *The Mind of Clover*, Copyright 1984 by Robert Aitken. Published by North Point Press; reprinted by permission.

The Diamond Sangha Ceremony on the Death of an Unborn Child

1. Three full bows.

2. *Vandana* and *Ti Sarana* in Pali, or *Taking Refuge* in English.

3. *Enmei Jikku Kannon Gyo*, or other short sutra in Japanese or English.

4. Leader:
We gather today to express our love and support for _____, and for _____ (names of parents), and to say farewell to a child unborn, a bit of being we have named ____, who appeared just as we all do, from the undifferentiated mind, as that mind, and who passed away after a few moments of flickering life, just as we all do.

In our culture, we place great emphasis upon maintaining life, but truly death is not a fundamental matter, but an incident, another wave. Bassui Zenji speaks of it as clouds fading in the sky. Mind essence, Bassui says, is not subject to birth or death. It is neither being nor nothingness, neither emptiness or form and color.

It is, as Yamada Koun Roshi has said, infinite emptiness, full of possibilities, at once altogether at rest and also charged with countless tendencies awaiting the fullness of karma. Here _____ is in complete repose, at one with the mystery that is our own birth and death, our own no-birth and no-death.

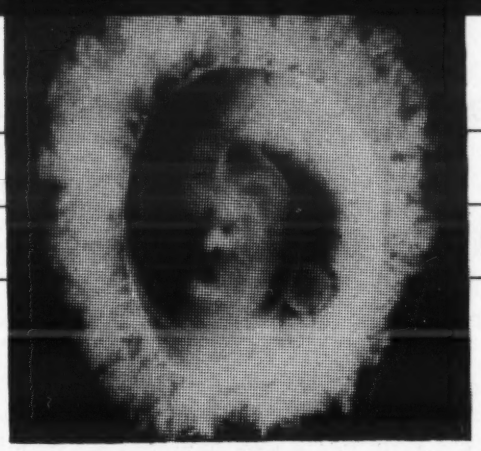
5. *Heart Sutra* in Japanese or English, as parents, leader, and friends offer incense.

6. Leader:
Buddha nature pervades the whole universe,
existing right here now;
with our reciting of Enmei Jikku Kannon Gyo
let us unite with
the Ancient Seven Buddhas,
Fully Realized Shakyamuni Buddha,
Great Compassion Avalokiteshvara Bodhisattva,
Earth Treasury Ksitigarbha Bodhisattva,
all Founding Teachers, past, present, future.
We especially dedicate our love and our prayerful thoughts to you _____ may you rest in perfect peace. Let true Dharma continue — Sangha relations become complete.
All:
All Buddhas throughout space and time,
all Bodhisattvas, Mahasattvas,
the Great Prajnaparamita.

7. *Great Vows for All* in English.

8. Three full bows. ■

The Consequences of a Human



Treating the Fetus as Being

Alexander Tsiaras

by Kevin Kelly

A forty-day-old human embryo, life size.

FOR A WHILE NOW I have been wondering what the specific consequences of treating the fetus as a human being would be. Last summer I mailed a query similiar to this page to regular contributors to *Whole Earth Review* soliciting conceits. I asked them to pass my request on to friends who might have something interesting to say. I said:

I am looking for unexpected effects that would surface if large numbers of our society started treating the fetus as a human being. Certainly a tide of legal, social, moral, and medical questions would immediately arise.

Besides the obvious issue of abortion there would be a host of genetic and biological dilemmas — surrogate mothering, eugenics, test-tube babies, and all the tangled rest we haven't confronted yet. If we treated the fetus as a human being, how would that change things? What would happen? Can we imagine it?

If you don't think the fetus is a human being, how bad would it be? If you do think the fetus is a human being, how good would it be?

I am not impartial to this. Anne Herbert, the gifted writer and former editor of this magazine who inspired this project (although she has nothing to do with it or my ideas) suggests that if we want peace we must imagine a world without killing in all its particulars as a first step.

I would like us to imagine a world without killing the unborn, where the fetus was treated as a human being. What would the consequences be? I'd like the zealous pro-lifers to imagine that, the consequences of no abortions; and all the women and men in the many details of their lives, what not killing the unborn would mean to them, how it would hurt, the trouble and pain it would cause. I would like the pro-abortion choosers to imagine a world where the fetus was treated as a human being, where the misery of an unwanted child was not dealt with by killing the child. Suppose there's this place where fetuses are treated as humans, so when one is conceived unintentionally, or by force, or by research, it's taken care of, it's dealt with, things are changed at a great price to grant it its existence. It takes courage to even imagine that. Can you see it?

It's sometimes hard to see. Watching women who are unfairly overburdened with the responsibility of kids makes it hard to imagine. I think it's wretched that so many men deny responsibility for the fetus they coinitiate. Abandoning this responsibility brings wretchedness to the women who are wrongly asked to deal with the fetus's compounding demands alone, and it too often brings fatal wretchedness to the unborn fetus. If you regarded the fetus as a human being how would it change your approach to sex?

I think considering the fetus a human being would keep our definitions of "human" wide. We would be less likely to narrow our acceptance of who is human, to cast away those not formed like us. As it is, we find it particularly tempting to eliminate those who don't meet our specifications (white, extra-bright, no defects) while they are yet voiceless and unseen, whereas once they are born we are obliged to accept and adapt to their otherness. Imagine a world where the misshapened were not permitted to live, where everyone was "normal." That's the opposite of a place where the fetus is treated as a human being.

I imagine not only less violence against the unborn, but more regard for it. One of the consequences of treating the fetus as a human being is that we would treat it as something with its own inherent value, not just something that had potential. It would have worth and meaning merely because it is human, not because of what it has done, not because of what it will do, but because it is.

Usually we fall into thinking of a pregnant women and her fetus as being adversaries battling over exclusive rights, the right of a woman to control her body versus the right of the fetus to live long enough to control hers. I am trying to imagine what it would be like if we choose to help both the fetus and the mother, if we gave them both all the support they needed to live and live well, if we decided they both were valuable and important. What would that mean to us as a society? If we choose to use all our resources, anything it took to make that happen, what do you think it would be like?

I think it would be a royal pain. It would cost a lot. The consequences of treating the fetus as a human being means life for the soon-to-be born and a lot of trouble for the rest of us. It's not convenient. It means sacrifice and going out of our way. It means treating not only the fetus as a human being but also women and the handicapped babies that would be born, treating them as human beings too. It probably also means treating our enemies as human beings, but all that suddenly sounds so difficult that I understand again why we shy away from it, especially when we are in the embrace of one we love.

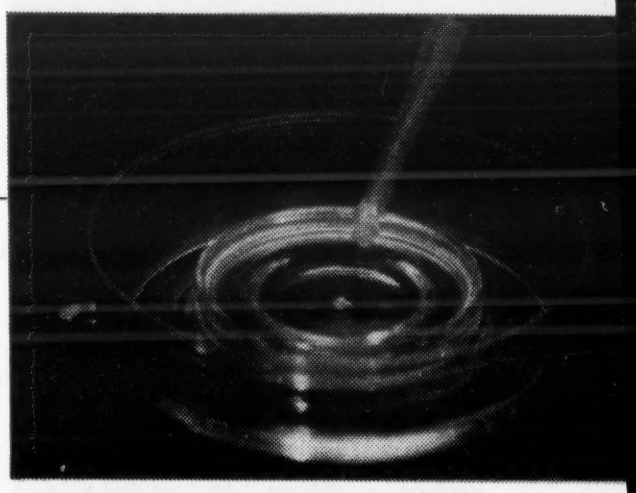
There are many immediately difficult consequences no matter how we treat the fetus. What do you think the consequences of treating it as a human would be?

That's my rap.

I'm sure there would be all kinds of effects, unpleasant and wonderful, that I haven't considered, but you might have. I'm looking for concrete examples of consequences. Details we shouldn't overlook while we imagine. Send them to me at Whole Earth.

What are the consequences of treating the fetus as a human being?

This inquiry was suggested to me by Sallie Tisdale, who provided the following puzzles that sparked that question in her mind.



In vitro fertilization: egg meets sperm in a petri dish.

The puzzle

If "extra" embryos are created with test tube fertilization, can they be thrown away? Who disposes of them, the donors or the physician? A lab technician holds two vials, one filled with eggs and one filled with sperm. He dumps first one, then the other, down the drain. Again he holds two vials, one of eggs, one of sperm. He pours both into a third vial and waits a few moments, then dumps *that* vial down the drain. Is there a qualitative difference in the actions? Is the second action abortion? Again he mixes the two vials, planning to implant a viable fertilized egg, only to learn that the woman has been discovered to have a medical problem making pregnancy impossible. Can he get rid of the fertilized eggs now? Does he have a duty to find a surrogate?

(See *Journal of Medical Ethics*, 1982:57 and 1984:2)

§

The sperm and egg are mixed and ready for implant when the parents are killed in an accident. Who has custody of the embryos? Can the embryos inherit the parents' assets? (It was clearly the intention of the parents to carry the embryo to term and raise it). If there is a will naming children "known or unknown" as heirs, does the physician have a legal obligation to attempt to bring the embryo to term? Can the embryo be adopted and have its rights to now-dead parents terminated? Who is responsible for cost of care and education? If destroyed, who carries out the destruction?

§

Historically, a child born dead was allowed to inherit, but this was only related to children conceived in utero. Children killed while in utero have been denied damages and rights, but recent decisions have reversed this tradition. Unborn infants have 'sued' for both criminal and malpractice injuries.

In Dec. 1978, the New York State Court of Appeals held that a doctor may be responsible for an abnormal child's lifelong special care payments if the mother was not properly advised of the possibility of a defective child (and given the option to abort). This is very close to a "wrongful life" decision, because it is saying that the doctor, if he had allowed or offered to assist the woman in killing a *possibly* defective child before birth, would have been more correct than in allowing it to be born. (See *Associated Congenital Malformation*, Ed. M. El Shafie and Charles H. Klippel, 1981.)

§

A 40-year-old woman, after many years attempting to conceive, became pregnant with twins. It was discovered through amniocentesis that one twin had Down Syndrome and the other was normal. She considered aborting both babies in order to avoid the birth of the Down child, but instead elected an experimental technique by which the Down child was killed (at five months' gestation) by the removal of half its blood. The dead fetus shriveled up as the live fetus grew, and was expelled after the normal birth of the live child.

The technique was dangerous to the normal child and can be seen as controversial for that reason alone. Also, the wrong fetus could have been killed. Since the law gives the mother control over the fetus until approximately six months' gestation, any damage to the normal fetus would have been noncriminal (although it's possible the physician could be sued for malpractice if the normal child or the mother were injured — usually, informed consent for experimental procedures covers all possibilities).

§

If a child is aborted by saline or prostaglandin injection and is born alive, what is the duty of the physician and nurses in attendance? Of the mother? Doctors have been sued successfully both for *not* attempting to revive the live fetus, and for refusing to stop revival attempts. If the fetus lives, who is responsible for its care and the financial obligation incurred? What if, in the process of abortion or resuscitation, the fetus suffers brain damage and is permanently disabled? Can the mother apply for custody, or does an attempt to abort a child constitute child abuse to the child?

§

The famous 1973 abortion decision by the Supreme Court, *Roe* v. *Wade*, allows states to legalize abortion up to the point of viability. In most states this has been interpreted as being between 24 and 26 weeks' gestation. Fetuses born prematurely as young as 23 weeks have survived with intensive care (although they suffer a very high rate of neurological and other physical as well as cognitive deficits, including deafness and blindness). How is viability defined, and who defines it? Should the Supreme Court periodically review viability as a time frame, based on new techniques, or demand that states revise their laws based on a "best-case scenario" for fetal survival?

§

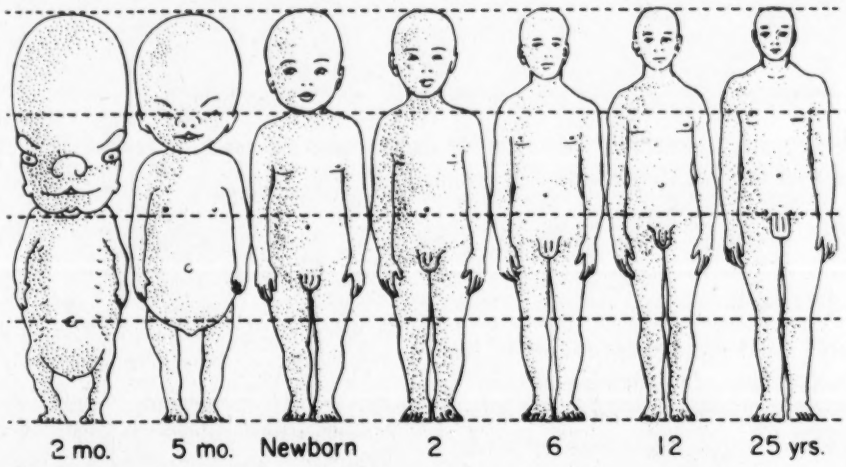
In a number of cases, a woman has been advised that her baby's survival depended on a Cesarean section birth, and the woman has refused to undergo the surgery. In most of these situations, time permitting, a judge has ordered the surgery to be performed against the woman's will for the sake of the child. Cesareans, especially emergency ones, carry a degree of risk to the mother, both to her health and to her reproductive future, and also are riskier for the child. In the past decade a good deal of research indicates that Cesarean sections are greatly over-used and abused by physicians, and in many cases a vaginal birth would have been not only possible but preferable. However, the urgent necessity in these cases prohibits lengthy consideration, and only the team of physicians available have the information necessary to determine its import. *Roe* v. *Wade* would seem to indicate that at term a woman no longer controls the life of the infant. However, there is no other procedure in which a person could be forced to undergo surgery for the sake of another person.

§

Fetal surgery is still experimental, but in

S. L. Craig

Donor sperm is frozen, then stored in numbered vials. To date, three fertilized eggs — embroyos — have been frozen, thawed and implanted successfully.



Changes in proportion of the human body from 36 weeks to adult.
(From *Growth*, by W. J. Robbins, 1928.)

certain specific conditions such as renal hydronephrosis has proven to be life-saving to the child. A number of other conditions are under investigation. Amniocentesis can detect 5 to 10 percent of all congenital malformations, although results of the test come less than a month (in most cases) before the limit for abortion. Fifteen percent of all amniocentesis tests, however, are either harmful or inaccurate, and in some cases are fatal to the fetus. Fetal surgery itself raises a number of problems:

• A normal child could be mistakenly diagnosed (by amniocentesis) and either aborted or operated on. Who is responsible, if the parents are warned of the percentage of risk?

• Could known or suspected carriers of genetic disorders be forced to have prenatal screening, and forced to undergo abortion or surgery? We already provide for this as a society by condemning incestuous relationships, even marriage between first cousins.

• How low do the risks of surgery have to be before a mother could be forced to undergo an experimental procedure? What if she carries twins? What if the risks are low but the likelihood of benefits is also low? Abortion law would indicate that a woman could refuse any procedure on behalf of her child up to the third trimester.

• What if the surgery will save life but the child will still be handicapped? What if the parents alternative to surgery is abortion? Who decides the "best interests" of a child, and can death be in the best interests of a person faced with a permanent disability?

(See *The Unborn Patient: Prenatal Diagnosis and Treatment*, by Michael R. Harrison, Mitchell S. Golbus, and Roy A. Filly, 1984.)

UCSF

Preemies as young as 23 weeks old (about one pound in weight) are nursed in a plastic womb, and can survive to become healthy adults.

The consequences of treating the fetus as a human being

What would follow the simple wording that life begins at conception and is from that moment entitled to constitutional rights? Here are a few possibilities:

• Both mother and fetus would have equal right to continued life, therefore if pregnancy endangered the mother she would not automatically be allowed to protect herself (perhaps the fetus could be charged with attempted murder . . .). The same goes for twins and other multiple births; each has a right to consideration.

• Such procedures as amniocentesis and fetal surgery would be controlled, allowed only in times of saving life, and then the risk factor to mother and/or other siblings poses extremely difficult questions.

• If the mother requires treatment for a condition that threatens the life of the fetus, like appendicitis, would her receiving that treatment depend on whether or not the child could be removed and hooked up to something like E.C.M.O.? — after all, maternal death means fetal death.

• IUDs would be illegal, because one of the theories of their effectiveness (and no one really knows) is that they cause abortion. The Pill, too, could come under fire, because it simulates pregnancy.

• Abortion, of course, would be murder — premeditated. Many "aggravated murder" statutes would call for the death penalty in such a case.

• Fetal surgery, internal and external monitoring, hospital birth, Cesarean section, etc., could be required, according to prevailing medical opinion.

• All women of child-bearing capability could be prevented from working in environments potentially harmful to a fetus — and almost any environment carries that risk. They could also be prevented from using substances that harm fetuses, such as tobacco, alcohol, prescription drugs, etc. Any such behavior would constitute either child abuse or attempted murder or assault and as such would have to be reported. (A nonreporting witness would become a conspirator or an accessory.) For that matter, discussing abortion could be construed as conspiracy.

• Further problems of law arise, such as property rights, inheritance and the administration of wills, discrimination against sex, race, or handicap. The fetus would be a tax dependent, and a dead fetus would have an estate to be administered.

Can you think of more?

—Sallie Tisdale
Portland, OR

I fear we would behave more stupidly en masse than we already do now. We would be denying an obvious biological difference between potentially and actually viable life forms; we would once again be asserting that the highest and best use of a woman's life is childbearing; we would be negating the progress that has resulted from questioning that assertion; we would be removing yet another crucial responsibility from the realm of the personal and awarding it to society (and society has yet to prove itself to be a very great cherisher of the sanctity of persons); we would be making our culture even more disastrously homogeneous and homocentric than it already is.

At the most mundane and actual level, if we treated the fetus as a person, things would not be so very much different than they are now. Hypocrisy would be even more rampant; women's lives would be even more difficult; and there would be a lot more litigation and law enforcement to do, which would employ the burgeoning numbers of lawyers and hopeful legislators of morality.

—Stephanie Mills
Maple City, MI

The consequences would be that, for the first time in this country since the invasion of the white man, there would be no group of human beings who are lawfully the victims of those with power. The consequences would be a country where no one's life is considered disposable, and all human beings would share equal protection under the law. The consequences would be true equality and not an atmosphere in which rights are designated to a favored majority, or minority, by those who are unfortunately in the position to make such determinations. Whether we could live with such startling consequences remains to be seen, since they are not consequences we have im-

posed upon ourselves as a nation since its inception.

A truly terrifying thought to pursue is rather: "What are the consequences of NOT treating the fetus as a human being, and what is such a perverse mentality the consequence of?"

—Juli Maltagliati
Wheaton, MD

Every human being now alive as well as every human being that walked the face of the earth is or was at one time a fetus. And that should lead to a more relevant if more somber thought: What are the consequences of *not* treating the fetus as a human being?

History provides answers enough to such a question if we expand the question to its proper form. What is the consequence of some people treating other people as if they were not human beings? Up until the middle of the last century, the judiciary of this country specified that blacks were property, not people. If the issue had been debated then, and it was, proponents of slavery would have predicted the economic collapse of the South as the direct consequence of treating the Negro as if he were human. The South did suffer an economic collapse as a result of not treating blacks like humans, but the collapse was a consequence of the Civil War. Had they voluntarily emancipated the slaves, the war might have been avoided.

The same point could be made about the Third Reich. Ruin for Germany was the ultimate consequence of *not* treating the Jew as a human being. Should we expect a different fate? All Jews and all blacks were once fetuses. Abortion simply substitutes ageism for racism. Stage of development becomes the criterion whereby people are selected for extermination. Houses divided don't stand. The ultimate consequence of not treating human beings like human beings is ruin. It happened with blacks and Jews in the past; it's happening with the unborn, half of whom presumably are female, now.

But what about the women? Presumably one half of all those exterminated *in utero* are female. This seems a peculiar basis for sisterly solidarity, to say the least. Abortion is only plausible if one ignores large amounts of reality, and part of that reality is the state grown-up females find themselves in as a result of abortion on demand. Andrea Dworkin in her book *Right Wing Women* gives as accurate a description of the state of affairs as anyone:

> It was the brake that pregnancy put on fucking that made abortion a high priority political issue for men in the 1960s — not only for young men, but also for the older leftist men who were skimming sex off the top of the counterculture and even for more traditional men who dipped into the pool of hippie girls now and then. The decriminalization of abortion — for that was the political goal — was seen as the final fillip: It would make women absolutely "free." The sexual revolution, in order to work, required that abortion be available to women on demand. If it were not, fucking would not be available to men on demand. Getting laid was at stake.

What should we do with pictures of aborted babies, like this fetus found at a municipal incinerator in Wichita, Kansas?

I once asked Laura X, the anti-rape-in-marriage crusader, what she thought of Dworkin's statement. She answered that she thought it was brilliant.

"I would also say that that's true about the pill," she added. "I remember writing a pamphlet in 1970 called *The Pill Is a Male Plot.*"

"Do you think abortion is a male plot?" I asked.

There was a pause.

"It serves men in the ways that she describes, yes."

"Why are feminists for it then?"

I never got an answer that made any sense to me. The question came back to me when I saw a film of a suction abortion. Seen from the outside, the fetus is virtually invisible. That leaves one acutely aware of the violation that is being perpetrated on the woman by the abortionist. Her feet are suspended over his head in stirrups. He begins by ramming a number of graduated steel rods into her cervix to expand it to the point where it will accept the suction currette, whereupon he begins sawing away at the woman's vagina, causing the clear plastic tube leading from the currette to the suction machine to fill up with blood — the woman's and her daughter's (at least half of the time) commingled.

Feminists are under a spell. How else could they consider a violation of this sort liberation? If they and our society were to treat the fetus like a human being, the evil spell would be broken. Reality could flow back into their lives like sound into an unclogged ear. No more guilt-ridden protests full of Orwellian euphemisms about "products of conception" and "reproductive freedom." No more refusing to look into the microscope the way Galileo's contemporaries refused to look into the telescope. Reality may not seem like much at times, but at least it's, well, real. It's better than pretending — pretending, for example, that we were not once what we are now allowing to be killed, and pretending that we can deny humanity to one segment of the world's population without denying it to ourselves in the bargain. The final consequence of treating the fetus as a human being would be a sigh of relief. It would be okay to be human again.

—E. Michael Jones
South Bend, IN

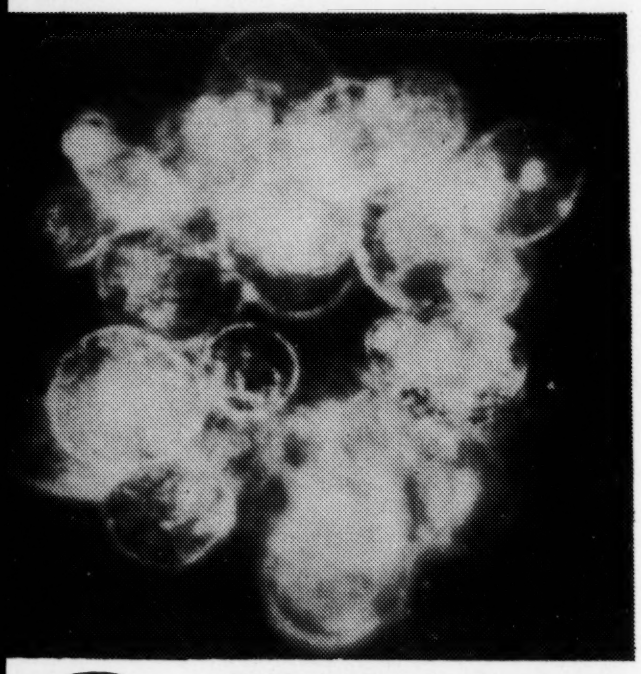
I imagine a place where a woman (and possibly her current mate) can go to report an unwanted pregnancy and receive help. This would be much like the unemployment office, where people get help finding jobs and receive intermediary paychecks. In addition to financial help there would be counseling to help the parent(s) decide if they could keep this child. And if they truly can't, then do they want a contact adoption or a non-contact adoption. If they opt to keep the child, will they want further state help in the form of food, shelter, jobs, money, and education (for themselves and the child). Will an unwanted child receive extra points on a civil service exam to make up for being unwanted? Will there be scholarships for them much like the ones currently available for the orphaned children of military personnel? Will parents who truly want a child declare this child to be unwanted simply to get some of these extra helps?

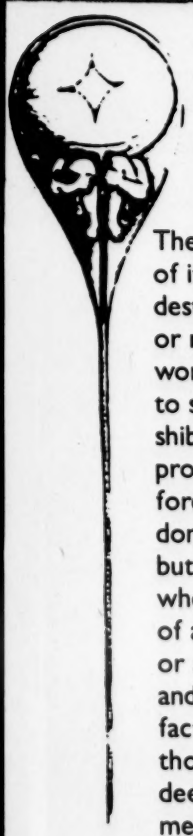
—Lois Wickstrom
Tampa, FL

It will doubtless mean that as in the old days, the rich can have abortions because they can pay the exorbitant cost and can make the necessary connection with a greedy but competent doctor. The poor fetus will either survive or be ripped out with a coathanger. The unborn, like the rest of us, will discover their fate is largely determined by their race, economic status, and genealogy.

If we are to treat the fetus as a human being, we will treat it variously: sometimes with utmost attention, sparing no expense, and sometimes with murderous brutality. Much will depend on which womb the fetus finds itself in. Commie

fetuses will not fare well in this hemisphere. Fetuses afflicted with rare diseases may on the other hand be pampered endlessly, or at least until the experiments are over. The possible complications are mind-boggling. What if pregnant women become terrorists, hijack a jet, and are critically wounded in a shootout? Will the medical team rush to protect the terrorist fetus? If the mother is brain-dead, will a prosecutor nevertheless insist on her "right to life" — a right perhaps even more easily defended since her bad ideas have vanished with the lost cortex? What would the police do if hundreds of pregnant women assembled in front of the Washington Monument and threatened to have abortions right there unless Reagan undertook serious efforts at arms control? What would they do if an angry abortion-clinic bomber seized a hospital and threatened to disconnect the artificial hearts unless the Supreme Court reconsidered its stand on abortion?





(Top) A microscopic view of human sperm. (Above) An incipient human six days old. (Below) A 1694 diagram of a baby inside a sperm cell.

The fetus has particular clout because of its innocence and defenselessness: its destiny can be determined; whether killed or nurtured, it represents a brave new world. All the above subjects have come to serve, I think, as rallying points or shibboleths, ways of concentrating and propagating various psychic and cultural forces. The process is complex and I don't pretend to understand it very well, but I *suspect* that most of the people who get greatly exercised over the issues of abortion, human rights, transplanted or artificial organs, the sanctity of life and international terrorism are not, in fact, directly and personally affected by those issues; but they are stirred very deeply all the same, are made to consider meaning and morality and their place and purpose in the scheme of things. Some of them touched more directly, to be sure: pregnant women who don't want a child or people whose loved ones have become medical experiments or legal test cases. I have noticed that those directly affected, more often than not, wish the rest of us would leave them alone.

To sum up, I guess I cannot generate great concern for the fetus and its rights, as a special case. My view is that humans need to treat each other much better and more evenly. The fetus is a human being and so is the terrorist.

—Will Baker
Guinda, CA

If fetal life is not to be terminated — if pregnancy is "irreversible" and a woman, once impregnated, must pretty much "bear with it" — then a man's obligation to support grows proportionately larger, too. It would certainly be sad and disappointing, as well as unjust, if the obligations for nurturing new life were to weigh solely upon the bodies and minds of women. Men have a capacity for benevolence and devoted love which can be activated when, through their sexuality, a pregnancy occurs. Men's emotional — as well as material — support for their families can make the difference between procreation as a biological slavery imposed on the female, and procreation as an ongoing, life-giving partnership which brings out a generous response from both the man and the woman.

Attitudes relating to family planning would change if abortion were eliminated as an option. The IUD and the Pill, morning-after and month-after methods would be ruled out because of their destructive effects on already-transmitted life. (There is a good case to be made against the IUD and the Pill on the grounds of women's health as well. Perhaps they should be banned as a consequence of "treating the *woman* as a human being.") The other, nonabortifacient forms of birth control — except for sterilization — all have a comparatively higher "failure rate" — this means that both women and men would be expected not to engage in reproductive-type intercourse unless they were willing to accept the distinct possibility that they might become parents by doing so.

Random sexual hunger and the vagaries of passion being what they are, we'd be expecting a fairly high level of sexual wisdom and self-control from people. This in turn requires a critique of our culture's very high levels of public sexual stimulation, much of which comes down to commercial pandering, i.e. trying to get at your wallet via your crotch.

The use of developing human beings as subjects for medical experimentation would halt if we treated the fetus (and embryo and zygote) as a human being. This would slow down, and perhaps stop entirely, the development of extra-uterine methods of human gestation, which some reproductive technicians have proposed. That research goal might be permanently foreclosed if manipulations upon human offspring at very early ages were seen as being unethical; human procreation would thus stay within women's bodies rather than being transferred to laboratory equipment.

If we treated fetuses as human beings, it would be inconsistent to cease giving them the same consideration after they were born. It might therefore lead to treating girls and boys, in general, as if they were human, too; and then, perhaps, men and women.

That could, without exaggeration, be termed unprecedented; and its consequences have yet to be seen. I can only say I think it would be quite wonderful.

—Juli Loesch
Erie, PA

When human beings begin to treat human beings as human beings, they will understand what human beings beginning to be human beings are.

—Heathcote Williams
Cornwall, UK

When my wife saw your topic, "The consequences of treating the fetus as a human being," she said, "What else *would* it be? A pig, or a sheep?" And that is the way I would approach your problem. A human fetus is a human being because a human being is what it is.

The first mistake may have been in calling it a "fetus." In the tongue of our real experience we don't say "fetus." We say "child" or "baby." When we talk, like clinicians, about "aborting a fetus," we are implicitly acknowledging that it is wrong to kill a child. "Let us destroy this fetus," we are saying, "before we have imagined its human face and suffered its human claims."

And this is what we mean when we speak of our warheads destroying an "enemy city": "Let us kill them abstractedly and far away, before we have seen them clearly enough even to hate them." Suppose our government should begin to say to us, "Let us be ready to kill all the Russian men, women, and children." It would be different. The greatest difference would be made by the thought of the children. Humanity has always understood that it is a horrible thing to make an enemy of a child.

What if we did treat our "fetuses" and our "foreign enemies" as human beings? It would be fearful indeed, no one can doubt it. For then we would have to take

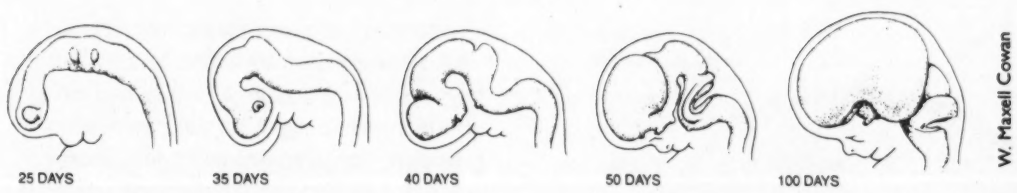
up living in reality. And reality always instructs us, when we become bold enough to venture into it, that we do not *know* enough to kill a human being. We are not eligible to accept that responsibility. Reality informs us that we live in mystery. A child may be a great burden or a great privilege. An enemy may become a friend, a friend an enemy. The value of a human life can only be determined by experience. That is our problem, and we have plenty of reasons to regret it. But the problem is only made worse by the assumption that there are simple technological remedies.

What is most disturbing about the acceptance of abortion as a normal solution is its association with "sexual liberation." One of our prominent characteristics as a nation now is the wish to free sexual love of its consequences — which is to say that we have become a nation of fantasists. In reality, sexual love has consequences. It has consequences even if it does not result in babies. But until recently, babies were understood to be among its expectable consequences. Sexual love, that is, was understood to be connected to fertility. And this connection gave sex the power of an endlessly ramifying wonder and joy: It renewed our kind and therefore our hope. (It involved us also, of course, in the history of the failure of hope; not all babies, by any means, have been a joy to their parents or a credit to humankind, though these failures do not license the destruction of babies.) But with us, sex no longer has a place either in human nature or in human culture. We have made it a specialty, degraded and industrialized, an energy mined and merchandised for quick consumption, exhausted in use.

Surely it is too much to expect that the "freedom" and "naturalness" of technological sex should prepare us to become proper nurturers of children. In general, it seems likely that we will care for our children neither more nor less than we care for one another as adults. And the true caring of adults for one another always involves respect, devotion, fidelity, restraint — all the cultural means of preserving the natural life.

I don't mean to underrate the danger of the "population explosion" or to rule out "birth control" as a consideration. I do think that the belief that "there are too many people" is potent with violence toward some people — "fetuses" or any other unpowerful group or class or race. And I think that the now almost universal insinuation that sexual love may properly go free of sexual discipline is as gross a danger to humanity as any other that we face.

—Wendell Berry
Port Royal, KY



Fetal brain development.

Abortion is an issue I've never made up my mind about. As a feminist, I can sympathize with the pro-abortion view. As a former fetus, I can understand the anti-abortion view. Having thus come down so squarely on the fence, I'll answer your question.

The legal complications of declaring the fetus to be a person would be immense, thus bestowing great happiness upon lawyers and great misery upon the rest of us. Abortion would become illegal, but many women would seek illegal abortions, as they have in the past. A father of the unborn child, or a man who only *claimed* to be the father, could ask for a court order prohibiting an illegal abortion of "his child." Could such an order be enforced? I doubt it. How could any court distinguish an abortion from a miscarriage? Wouldn't the father be free to get injunctions against amniocentesis and other "invasive" diagnostic techniques? If the fetus is a person, wouldn't the mother be entitled to AFDC payments immediately upon becoming pregnant? I can envision class action lawsuits "on behalf of" the unborn against polluters, manufacturers of junk food, and advocates of abortion.

—Mark O'Brien
Berkeley, California

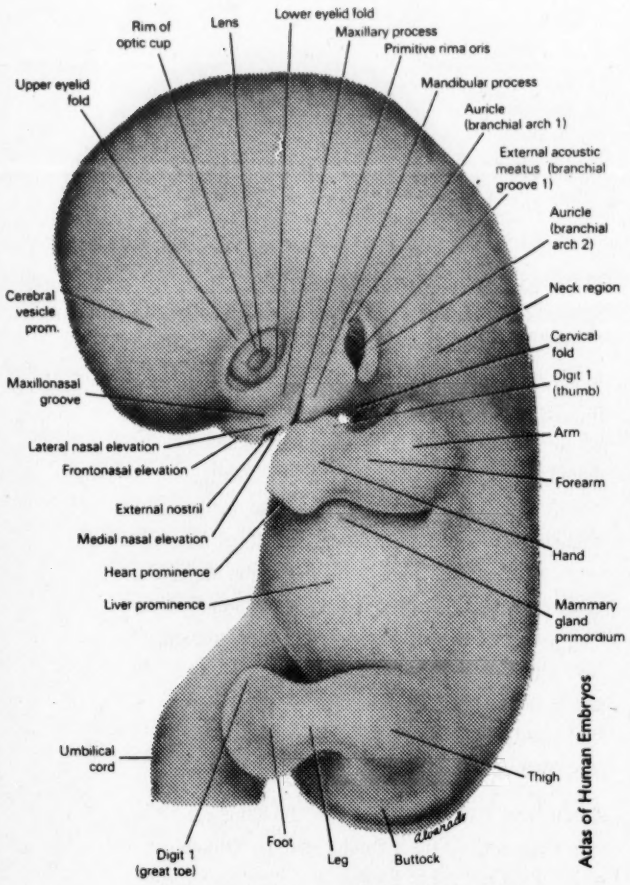
Ah — to imagine a world without killing, a world with peace. What a grand dream it is. Imagine a world in which the unborn child is as cherished as the one held in your arms asleep, a world in which the same arms are open to the unprepared and unhappy and unable, the worn and tired and abused. A world in which each of us, gladly, moves over to make room, give a little, reach out. No killing. Who can argue with such liberation?

This post-liberal fallacy in all its politically correct prose — I can argue with it. This is what Buddhist scholars have long called the "heresy of love and light," of being "stuck in heaven." There is great hazard in clinging to ideals: hazard that in doing so, we might turn away from what is, and hazard that we might find it expedient to try forcing reality to fit the ideal. It is undeniably important to be *able* to imagine a different world — but it is a terrible mistake to think that imagining it will make it real. That way leads to despair, and that way leads, too, to tyranny, fascism, and Orwellian twists of experience.

I find it notable that many of the left-leaning pacifists who are beginning to speak out about abortion are childless. Childless, too, the writers, editors, and artists of the alternative media, and the political activists who cross the country to speak. Just who, I wonder, will be scooting over to make room? Well, corporations should, of course, and the defense budget, and suburban consumers and the rich everywhere. And if they don't? Who moves over, buys another bag of groceries, opens the hide-a-bed for a million more poor mouths and their million poor mommies? You, him, her, over there, cough up, fork it over — my own home is cozy enough. I can't.

Abortion has been carried to an extreme. My research often takes me to the netherland of medical texts — I see the pictures, blink twice at the research abortion has, in passing, made possible. I have no blinders about that. Do we really think a world without abortion will be a world of moderation? Zealousness is so human a response to believing one is right, after all. If the fetus, overnight, is declared a human, granted the rights of a human, then we trade one kind of barbarism and murder for another. Women of childbearing age (that's you and me, sister) would be prohibited from working in jobs or environments that might harm a fetus — could be prohibited, in fact, from working anywhere that wasn't proven to be safe. We could not drink alcohol or smoke. We would be required — at all times — to follow careful diets, keep our weight down, avoid venereal diseases and prescription medications and certain teratogenic illicit pleasures. For a woman to do any of these things would be tantamount to reckless endangerment at best, to negligent homicide or first-degree murder at worst. Oh, and birth control — most methods work by interfering with a fertilized egg (a human now) and so must be abandoned. Back to rhythm — remember rhythm? (Better make that three million babies.) The fetus could sue for property rights, inheritance, product liability, violation of civil rights, and put each of us in jail. If you doubt these possible futures, you do not read the newspaper.

I have another little problem with this vision. What if I do open my arms, my home, my wallet to some little lost 15-year-old girl, pregnant and afraid, and offer to care for her and her child? What if I do, and she *still* doesn't want to carry that baby? She just might say no to my offer. What then — do I force her



Portrait of a seven-week-old human fetus, about 18mm (¾"). It has a brain, a stomach with digestive juices, and arm muscles that work.

to accept my gift, my vision? What of peace then?

I ask my liberal abortion-doubting friends why they haven't adopted an unwanted child, or sheltered a pregnant girl, and they say: I'm single. I can't afford it. I have work/art/political action to do that takes all my time. I don't know how. I'm scared. This litany sounds familiar; these are the reasons women seek abortions, seek them sadly, guiltily.

The trouble with imagining a world without killing is that we live in a world full of it. We can be here, or we can lay around the clouds, humming all day. Peace — compassion — begins with a kind word to the bank teller, courtesy in traffic, turning away from the meat counter, recycling empty bottles, and stopping to see if the man curled up in a cold doorway needs your help. If I try each day to do each of these things, then maybe sometime that 15-year-old will ask for my help. If I force it on her, for whatever reason, I'd be killing *her*.

—Sallie Tisdale
Portland, Oregon

It's a misconception, really, that the Supreme Court decision on abortion ruled that fetuses of human parentage are not human beings. What they said was that they didn't have to decide when life begins; the issue was whether or not unborn children were legally "persons in the whole sense."

When abortion was illegal, the fetus was often spoken of in the law as "an unborn child." Many legal rights had been granted — the right to sue, through a guardian, for prenatal damages, even wrongful death, the right to inherit property, to be considered a Social Security survivor, among others. But the Court decided that all of these rights were contingent upon live birth; therefore, unborn children were not considered persons with the full legal rights of persons.

Why this should have led to the conclusion that they could be legally killed is beyond me. Dogs and cats aren't persons, either, but if someone chopped them up or killed them, needlessly, in brutal ways, he'd find himself in a heap of trouble. Furthermore, if *full* legal rights are necessary to ensure personhood, then why are children under eighteen to whom *some* legal rights are denied considered to be persons under the law? Why is it murder to kill illegal aliens who have no legal rights at all in this country? And why *isn't* it murder to destroy a corporation which happens to be a legal person?

The Court — and everybody else, it seems — got hopelessly confused about "personhood" and "human beings." As a result, there's all sort of concern over what would result from declaring unborn children to be human beings/legal persons. "Legal chaos!" That's the rallying cry of those who prefer the current status, as if legal neatness is preferable to protecting human lives. Sorry, kid, we can't keep anyone from cutting you up because it wouldn't be legally tidy. Is the bloody procedure neat? Well, no, but look at the turmoil it would cause if we gave you the right to live. Why, little one, they say we'd have to count you in the census, deny your mother the right to vote because there can't be two persons in the voting booth, require a passport for you if your mom is traveling overseas, get you a conception certificate, count your age from conception instead of birth — all sort of horrible things, you see. (There are perfectly practical answers to all of these arguments, but the claims themselves are too frivolous to waste the time and space.)

More serious are the claims that if the unborn child is a person, abortion would have to be denied even if the mother is in danger of dying without one; that pregnant women who smoke, drink or use drugs could be charged with harming another human being; that women who have abortions could be charged with murder and even sentenced to death. None of these outcomes ever happened when abortion was illegal and an unborn child was not regarded as anything but human. Doctors, indeed, always knew they were treating two persons when they dealt with pregnant women.

Abortion to save the mother's life was legal in every state except Louisiana long before the Supreme Court decision was made. And the sacrifice of one life for another isn't illegal in other circumstances if both can't be saved. Take the matter of Siamese twins who by all legal standards are both human beings and persons. When in the course of surgery to separate them, it has been discovered that a vital body part is shared and must be given to one or the other, no one has been accused of murder when the deprived twin dies.

Will pregnant women who smoke, drink, or use drugs be accused of some crime? Child abuse? Child endangerment? Possibly. But nursing babies are human beings and legal persons, isn't that so? And it's known that drugs and alcohol can pass through to them from breast milk, but nursing mothers haven't been charged with committing criminal acts.

As for murder, the killing of a human being is always regarded as some sort of homicide. But it isn't always murder; it's rarely capital murder. In the case of the aborting mother, in all likelihood, she could claim innocence by reason of emotional distress. Even in the killing of a child already born, I can't recall a single case of a mother being executed, although in a few instances, fathers have been.

Other popular procedures besides abortion would be affected by recognizing the human and legal status of unborn children, but there are reasonable treatments of most of them. Surrogate motherhood, if it involved embryo transplants, probably would be denied because of the danger of killing the child. But the woman could still have a baby for someone else through artificial insemination (or the old-fashioned way!) Test-tube creation of babies could still be allowed so long as "extras" were not developed and discarded. Killing fetuses for eugenic reasons could not be allowed, but it shouldn't be, in any case. How far would medical science have progressed if killing the patient were allowable as the "cure"? Lives ought not to be disposed of for being imperfect. That's a Nazi concept — killing the "unwanted." Fetal experimentation would be forbidden (as it is, anyway, under current laws) unless it were intended to help the child on whom the experiment is performed.

All in all, the legal chaos deplored by those who want unborn babies to be left in their present status as nonpersons wouldn't be so terrible. It's the killing that's terrible. No rational, reasonable person would ever do to other living creatures what's being done to human fetuses.

—Frances Frech
Kansas City, Missouri ■

What Sort of People Should There Be?

Ones more farsighted than us, argues British philosopher Jonathan Glover. It's a question no one wants to take seriously, yet our technology is asking it. Why we don't want to ask the question is part of the answer. Other riddles covered: genetic engineering, mind engineering, mood control, and who chooses the engineers. This is a rather dry and pedagogical book that asks the questions that we haven't been asking. —KK

[Suggested by Thomas MacSheoin]

What Sort of People Should There Be?
Jonathan Glover
1984; 190 pp.
$5.95
($6.95 postpaid) from:
Penguin Books
299 Murray Hill Parkway
East Rutherford, NJ
07073
or Whole Earth Access

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It is hard to guess how far [human] cloning would change relationships, or whether any changes would be on balance for better or worse. The central objections have to do with the narrowing of the gene pool, and the impoverishing uniformity involved. These objections are so strong that any substantial use of cloning batches of people could only be justified by some very pressing reason, of a kind not now apparent.

•

We say that, by adding some cow genes, we have produced sub-humans rather than humans. But someone might reply that, by adding some human genes, we have produced super-cows rather than cows. If the number of humans stays constant, and the population of ordinary cows declines as farmers choose to have super-cows instead, it is hard to see that the world has grown worse.

•

If we produce a group of people who turn out worse than expected, we will have to live with them. Perhaps we would aim for producing people who were especially imaginative and creative, and only too late find we had produced people who were also very violent and aggressive. This kind of mistake might not only be disastrous, but also very hard to 'correct' in subsequent generations. For when we suggested sterilization to the people we had produced, or else corrective genetic engineering for *their* offspring, we might find them hard to persuade. They might like the way they were, and reject, in characteristically violent fashion, our explanation that they were a mistake.

•

The dominating reason for caution about adopting positive human genetic engineering, as well as for gradualness if we do adopt it, is the risk of some irreversible disaster.

New Conceptions

Making babies by any method other than the usual way is the immense subject of this book. It is not surprising that when procreation is moved from the bedroom to the lab bench, confusion is born. This author does an admirable job in weaning the confusion away from the tools so you can decide if you want to use them. I came away from her compassionate reporting with the distinct sense that new-fangled conceptions are a long lever bending our culture profoundly. —KK

New Conceptions
Lori B. Andrews, J.D.
1984; 326 pp.
$14.95
($16.45 postpaid) from:
St. Martin's Press
175 Fifth Avenue
New York, NY 10010
or Whole Earth Access

•

Other women enter into surrogate arrangements because they enjoy being pregnant. "Many say they would like to be pregnant their whole lives," states Parker. "They just don't want to rear children their whole lives." For example, nineteen-year-old Corinne Appleyard, who served as a surrogate for George and Sheila Syrkowski, claims that she feels more energy when she's pregnant. Surrogate Elizabeth Kane once remarked, "I have babies so easily. They just pop out."

•

For the woman who can provide the uterus for a child but not the egg, one answer in the future will be an egg donation. Already the use of the procedure is being explored by scientists in Italy. They call it TDO, the transfer of donor oocytes (eggs). Through a laparoscopy they extract an egg from the ovary of a woman donor. They use another laparoscopy to place the donated egg in the lower part of the fallopian tube of the recipient. The woman who receives the egg can then have sex with her husband or be artificially inseminated with his sperm in the hope that the sperm will fertilize the egg in her body and the pregnancy will develop normally.

•

Dr. Cecil Jacobsen of George Washington University Medical School fertilized a chimpanzee egg *in vitro* with chimpanzee sperm, implanted it in the abdomen of a male chimpanzee, later delivering a healthy baby chimp through a Caesarean section. Australian researchers predict that the technique could be adapted to male humans, leaving open the possibility of surrogate fathers.

VALUE OF THE HUMAN BODY

To the Editor: Most people have heard that the human body is worth only a few dollars on the basis of its elemental composition and the market prices of the elements. Anyone who has ever ordered biologic chemicals, however, knows the actual cost of the chemical compounds found in human blood and tissue that have not been reduced to nearly worthless ash. Table 1 provides a list of the retail prices of a few compounds found in the body of a 70-kg human being, based on average blood and tissue levels and average blood volume.[1] Current market values were obtained from a recent biochemical catalogue.[2]

Considering the retail cost of these few substances we carry around with us, the market value of the entire human body must be astronomical.

DANIEL A. SADOFF, D.V.M.
University of Washington
Seattle, WA 98195

1. Davidsohn I, Henry JB, eds. Todd-Stanford clinical diagnosis by laboratory methods. 15th ed. Philadelphia: WB Saunders, 1974.
2. February 1983 catalogue, Sigma Biochemicals, Inc. St Louis: Sigma Biochemicals, 1983.

Table 1. Amount and Value of Selected Constituents of a 70-kg Human Body.

COMPOUND	AMOUNT IN BODY	VALUE
Cholesterol	140 g	$525.00
Fibrinogen	10.2 g	$739.50
Hemoglobin	510 g	$2,550.00
Albumin	153 g *	$4,819.50
Prothrombin	10,200 U	$30,600.00
IgG	34 g	$30,600.00
Myoglobin	40 g	$100,000.00

*Amount in serum only.

—*New England Journal of Medicine*

Birth & Life Bookstore

Hundreds, no thousands, of in-print books on children, birthing, adoption, toilet training, and so on. They stock nine books alone on the topic of twins. Longish, detailed reviews fill the front of their newsletter/catalog evaluating the latest mothering/fathering/babying books. They are far more up to date than we could ever be. —KK

Imprints

Catalog **free** from:
Birth & Life Bookstore
7001 Alonzo Avenue NW
P. O. Box 70625
Seattle, WA 98107-0625

•

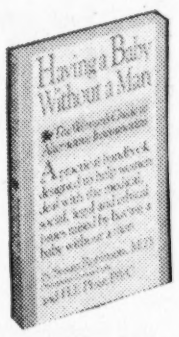
The Affordable Baby: A Complete Consumer Guide to Costs and Comparisons for Parents-to-Be, by Darcie Bundy, 1985, $6.95 paperback
This comprehensive guide to the cost of having a baby provides information on a variety of topics of interest to parents-to-be. Along with national price ranges for medical care — including obstetrical and pediatric fees, hospital costs and special medical tests — the author provides sensible advice on choosing the right health insurance, getting the obstetrical care one really wants and comparison shopping. In addition, Bundy offers a quality guide to maternity and baby clothes and baby equipment — especially helpful for parents who find themselves bewildered by the vast array of apparent "must-haves" for a child. Finally, sound information is provided on day care and on long-range planning, including writing a will and saving for a college education.

Having a Baby Without a Man

This manual is far too superficial to adequately deal with the emotional, ethical, and moral issues of the title's currently impossible promise, but it does provide complete instructions for do-it-at-home, artificial fertilization, a technique many infertile couples may prefer to a clinic visit.
—Kevin Kelly

Having a Baby Without a Man

Susan Robinson, MD
and H. F. Pizer, PA-C
1985; 191 pp.
$7.95
($9.45 postpaid) from:
Simon & Schuster, Inc.
Attn.: Mail Order
200 Old Tappan Road
Old Tappan, NJ 07675
or Whole Earth Access



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The ejaculate should be collected in a clean, dry glass container. Plastic and Styrofoam may deactivate sperm.

Once collected, semen should be maintained at room temperature until it is used for insemination. Do not attempt to refrigerate or freeze a fresh semen specimen.

Plan on using the fresh semen within one to two hours of collection. While some researchers allow the semen to be used within two hours of collection, we favor its introduction into the vaginal cavity within one hour. This increases the likelihood of success.

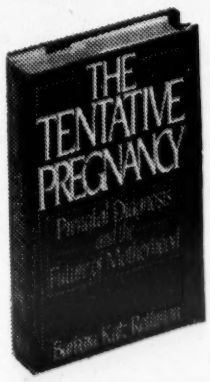
The ejaculate will liquefy spontaneously in three to five minutes. You will notice that in this time the semen will become increasingly slippery, liquid, and far less viscous. Liquefication willl allow you to more readily draw the semen into the inseminating device. Let the semen liquefy before performing AI.

The Tentative Pregnancy

Dramatic advances in medical technology now allow doctors to detect birth defects in a child before it is born. What effect does this have on pregnant women? This difficult subject is tackled by ***The Tentative Pregnancy****. This is not an insensitive consumer guide. It is a deeply caring look at the powerful emotions and ethics of "amniocentesis," a test that determines whether an unborn baby is deformed. Until now the feelings of the expectant mother have been rarely heard on this subject. Anyone considering amniocentesis will want to hear what over 120 women said and felt about the procedure. The lessons of this book will become even more important as amniocentesis and other fetal tests become routine.* —Janna Katz

The Tentative Pregnancy

Barbara Katz Rothman
1986; 274 pp.
$17.95
($18.95 postpaid) from:
The Viking Press
299 Murray Hill Parkway
East Rutherford, NJ 07073
or Whole Earth Access



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New research is beginning to indicate that it is possible to discover chromosomal abnormalities in placental material which are not to be found in the fetus: That is, the cells of the placenta may develop with missing or with extra chromosomes while the fetus itself has normal chromosomes. Thus some women will abort a normal fetus because of an abnormal placenta.

•

What if we routinize prenatal testing for Downs Syndrome so that virtually every fetus is tested. If selective abortion were to be widely accepted, then there would be very few Downs Syndrome babies born. Those that were would be primarily children of women who had no prenatal care, women who are the poorest of the poor, the least educated, least powerful people in the society. Where will the pressure be to find cures for the problems brought by Downs Syndrome?

•

Of all the strange concepts and relationships brought by the new reproductive technology, the idea of women "fathering" children is perhaps the strangest, the idea we have the hardest time grasping. To be a father is to have a child of your "seed" growing in another person's body. A biological father contributes half the genetic basis for the child-to-be, but does not contain, grow, or nurture the fetus. This is the essence of biological fatherhood: The father is a genitor. With the new technology of reproduction, women too can now have their "seed" growing in another woman's body.

Childbirth Graphics

Amazing 3-D models and graphic posters for teaching (or learning about) the hard to imagine exit of a baby from the womb. —*KK*

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•

We would like you to meet our newborn babies Wendy and Scott. These anatomically correct dolls are the most lifelike that we have seen, complete with newborn shaped heads, wrinkled skin, and I.D. bracelets.

Each doll is 21'' long, fully jointed, and made of vinyl that is almost as soft as a real newborn's skin. Notice the umbilical stump and the Plantar toe reflex on the left foot!

They are ideal for parent or sibling classes or post-partum floor teaching.

FMGIRL Newborn Wendy $47.50 postage paid.
FMBOY Newborn Scott $47.50 postage paid.

Wendy and Scott.

•

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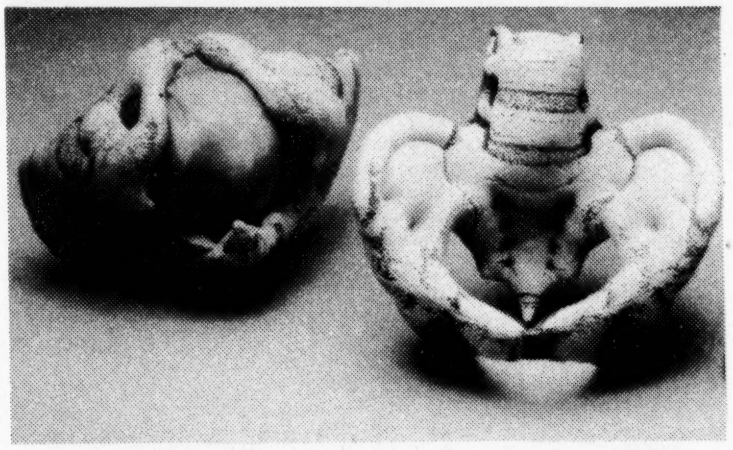
designed by Charlotte Yale Chamberlain
Our unique, cloth pelvic model is lightweight and unbreakable. It accomodates the larger, newborn-size head for the fetal model, and the coccyx is flexible and won't break off. You can demonstrate how a pelvis ''gives a little'' during birth, or you can make it change shape to show the effect of various pelvic shapes upon pregnancy and birth. It is accurately sized to adult, female pelvic dimensions. Fabric color may vary slightly according to availability.
PM50 completed pelvic model, $40.00 postage paid.
PMK10 kit for pelvic model, $16.00 postage paid.



Pelvic Model

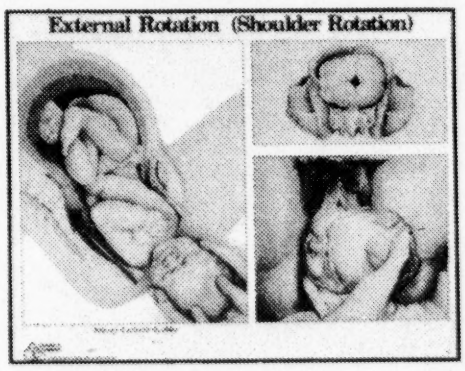
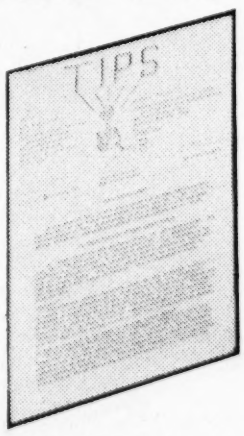


Illustration from *Childbearing, The Classic Series*

TIPS

TIPS is a scrappy newsletter commenting on abortion, euthanasia, sexual ethics, infanticide, disabilities, poverty, and the rights of the mentally retarded. It views all these as stitches in a ''seamless cloth'' of human life sanctity, a stance similar to Catholic politics. The principle is: You can't neglect one without unraveling the whole. I find confronting all the issues together broadens the arguments. The newsletter, mostly clippings from other periodicals with added editorial remarks, is nonreligious, but fervent. —*KK [Suggested by Larry Hunt]*

TIPS
Wolf Wolfensberger,
Editor
$20/year (6 issues)
from:
Training Institute
805 South Crouse Avenue
Syracuse, NY 13210-1796



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A teenager in California killed his father. At the trial, he said to the court, ''There was no reason for a trial. The man deserved to die. You had no right to interfere in my life. *It was a family affair.''* The boy has a point. If parents have a right to decide privately to kill their handicapped children, why can't handicapped children kill their parents? In this case, the boy had been mentally handicapped in the sense of having been badly abused all his life, and the parent he killed did appear, indeed, to be a very sadistic person. We can thus see how the individualistic arguments that killing babies is a private family decision are gradually extending through all of society, and are being extended (as by this boy) to all kinds of other people (*Syracuse Herald Journal*, 14/12/83).

•

We see an increasing trend toward afflicted or devalued people choosing suicide as a result of a broader pro-suicide campaign in society. Many people who are doing very well themselves are advocating that misfortuned people should commit suicide. Some of them promise to do so themselves, but when the time comes, some of them change their minds. An example is a 48-year old Florida man who signed a suicide pact with his wife, age 34. After watching her shoot herself and die painfully rather than painlessly, he changed his mind (UPI, *Syracuse Herald Journal*, 13/11/83). Nevertheless, it appears as if an increasing number of afflicted people are acting out in their own lives the glorification, by others, of suicide by afflicted people.

•

While almost everyone is aware of the fact that infants have been surviving at even lower birth weights, it is not equally well known that with aggressive neonatal management, fewer and fewer low birth weight infants are suffering handicaps.

Family Planning Perspectives

"Facts" about population and reproduction activities on a large scale are a quagmire of conflicting numbers that will grab both your legs and suck you down, babbling like a fool. The Alan Guttmacher Institute publishes this journal as a small spot of firm ground. It runs the most recent research, some in academic style, about what can be said on the topic with any solidness. Occasionally, it'll tackle ethical issues. —Kevin Kelly

Family Planning Perspectives
Deidre Wulf, Editor
$24/yr. (6 issues) from:
The Alan Guttmacher Institute
111 Fifth Avenue
New York, NY 10003

Digest

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The Rubber Tree

Male and female contraceptives by mail. All kinds of condoms, sponges and creams. —KK

The Rubber Tree
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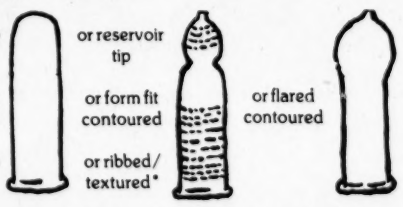
A GUIDE TO CONDOM CHARACTERISTICS

Many new brands of latex condoms designed to provide greater sensitivity during intercourse are now on the market. In addition, the traditional skin condoms (made from the caecum of the sheep—a natural membrane) also provide greater sensation (for most people) than latex. They are also an alternative for the small percentage of people who are allergic to latex.

Federal specifications regulate the size and thickness of condoms. The shape of a condom can make it **feel** larger or smaller or affect the degree of sensation. There are brands available that are slightly smaller in circumference and other brands that are slightly thinner.

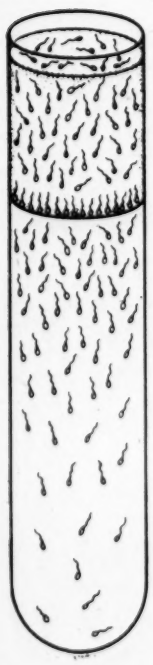
Other characteristics:

- plain tip
- straight
- smooth



or reservoir tip
or form fit contoured
or ribbed/ textured*
or flared contoured

- non-lubricated or lubricated: "dry" silicon or "wet" water-based jelly
- latex or "skin" (lamb caecum)
- neutral or colored



Sex selection

With a confidence of about 72 percent, you can select the sex of your baby before fertilization. At a licensed center, the male's sperm is filtered through a test tube of gel, then spun in a centrifuge, and the extracted sperm of mostly Y-chromosomes artificially inseminated into the woman. That basic process makes boys. For girls, the women take the fertility drug clomiphene citrate before insemination, which somehow skews the process in favor of females. Of the couples using this procedure, 52 percent request girls. There are several dozen clinics around the country with this service. —KK

Gametrics Limited
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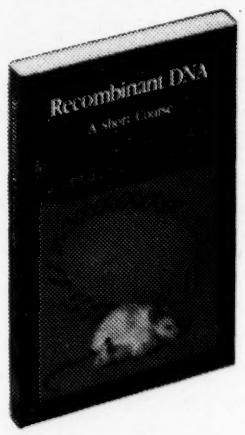
Gametrics Limited
324 South Third Street
Las Vegas, NV 89101

Recombinant DNA

A tough book for the laity, but it has the stuff clear and cold and well illustrated. —Philip Morrison

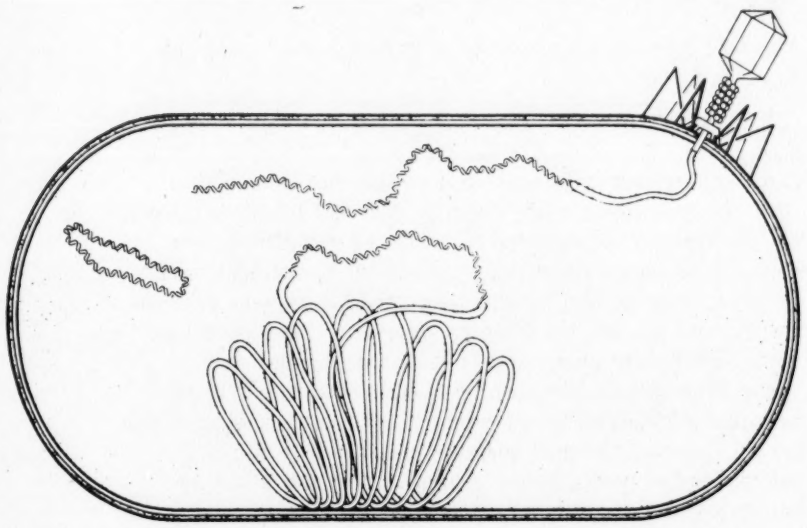
Recombinant DNA
(A Short Course)
James D. Watson, John Tooze, David T. Kurtz
1983; 260 pp.
$17.95
($19.45 postpaid) from:
W. H. Freeman & Co.
4419 West 1980 South
Salt Lake City, UT 84104



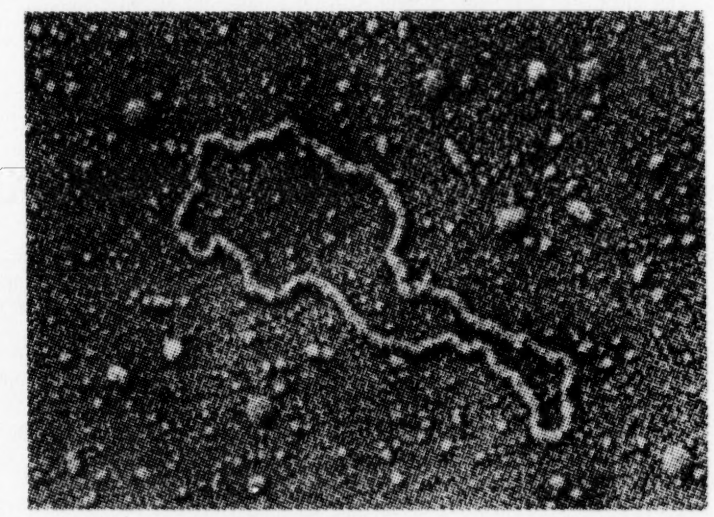
The structure of a transfer RNA molecule. Base pairing within the single-stranded molecule gives it its distinctive shape. The anticodon loop is the portion that decodes messenger RNA. An amino acid attaches to the CCA bases at the 3' end of the chain.

Understanding DNA and Gene Cloning

Clear, comprehendable, and as easy to read as it will get. —KK

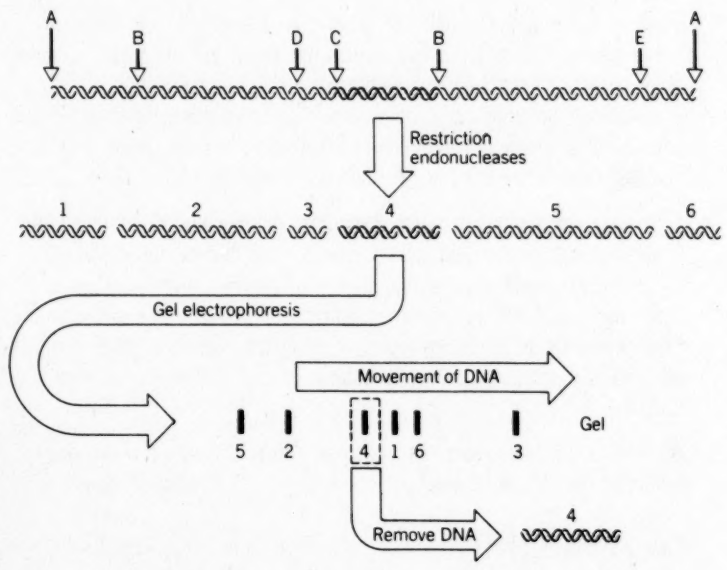


Bacterial cells can contain a number of different types of DNA molecules.

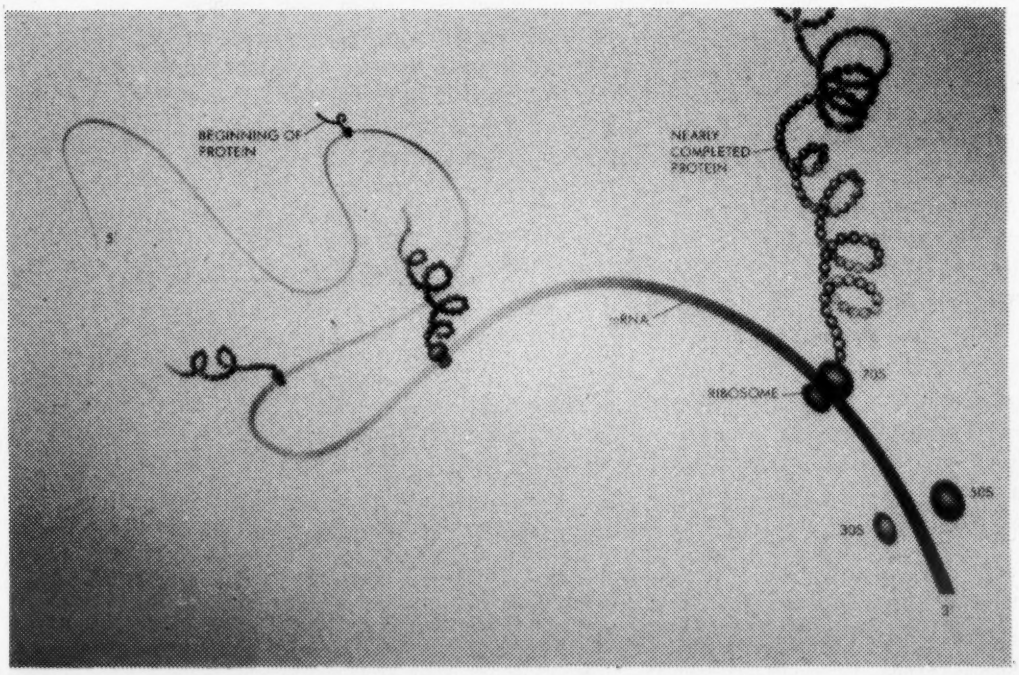


Electron micrograph of plasmid pSC101, the original clone in the first recombinant DNA experiments. (Courtesy of Stanley N. Cohen, Stanford University).

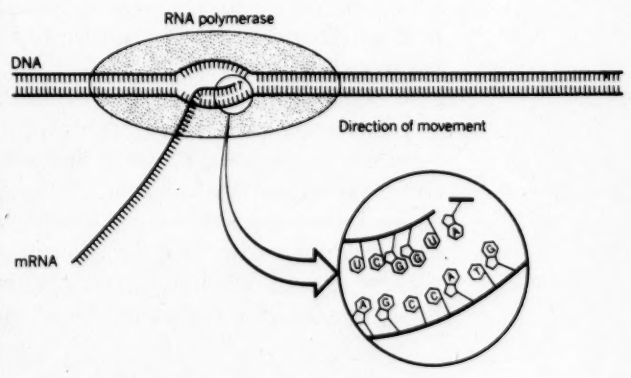
Understanding DNA and Gene Cloning
Karl Drlica
1984; 205 pp.
$11.95
postpaid from:
John Wiley & Sons
1530 S. Redwood Road
Salt Lake City, UT 84104
or Whole Earth Access



Cutting DNA into Pieces of Manageable Size. **A cloned human DNA fragment is often much longer than the region being sought (shaded region); thus, it must be cut into smaller pieces. Arrows A represent the ends of the human DNA fragment, and arrows B, C, D, and E indicate cleavage sites for four different restriction endonucleases. Treatment of the human DNA fragment with these four nucleases produces fragments 1 through 6; these fragments are physically separated by gel electrophoresis. Each band in the gel results from billions of identical DNA molecules. Individual bands are cut out of the gel, and the DNA is removed. In the example shown, band 4 would be saved for further study.**



Messenger RNA carries genetic information from the DNA to the ribosomes, where it is translated into protein. The polypeptide chains are elongated as mRNA molecules move across the surfaces of the ribosomes, with the 5′ ends being translated first.



Transcription. **The enzyme complex called RNA polymerase causes the DNA strands to separate within a short region (10 to 20 base pairs). The polymerase moves along the DNA, and as it does, it forms an RNA chain using free nucleotides. The order of the nucleotides in RNA is determined by the order of nucleotides in one of the DNA strands by the complementary base-pairing rule. In the example shown, the nucleotide sequence of the RNA is complementary to that of the lower DNA strand. For simplicity, the DNA strands have not been drawn as an interwound helix.**

Over the Hill

We mentioned a preliminary version of ***Over the Hill****, in WER #47 p. 86; now the whole book is ready. It's subtitled* ***But Not Out to Lunch! Over 40 and Still Cookin'*** *and is a delightful collection of short stories by men and women with a single trait in common — staying in shape as middle age arrives.*

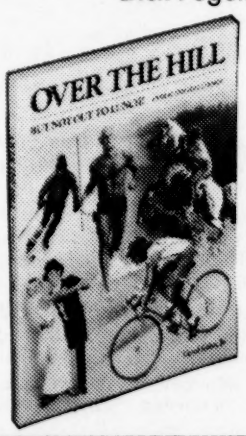
The folks range in age from their mid-40s to their 90s and in activities from running to surfing, weight lifting and hang gliding. Some of them were always in shape, but others were motivated by serious medical problems or desperate slobdom. Along the way they encountered the diverse mental and physical rewards of effort and the good health that can come from it.

This is not a how-to-get-fit book, but a series of capsule biographies that give formulas for motivation, diet, coping with injuries, and fitting exercise into hectic work schedules. It gives a glimpse of the inspirations that keep these folks working out while their peers are sinking into socially acceptable, high calorie oblivion.

The subjects are all quite human, not world champs. As they discuss their ups and downs, the reader is carried by osmosis and inspiration toward better nutrition and training, as well as considerations of what life's all about. The rewards of passing 40 can include wisdom and insight, quantities still unknown to many in our youth-oriented culture.

As the book mentions in closing, "once you're over the hill, you pick up speed." —*Dick Fugett*

Over the Hill (But Not Out to Lunch)
Lloyd Kahn, Jr.
1986; 146 pp.
$8.95
($9.95 postpaid) from:
Shelter Publications, Inc.
P. O. Box 279
Bolinas, CA 94924
or Whole Earth Access



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I just hate to see young people come into the gym and think something is too hard for them. If you're 24 years old and it's too difficult for you to do now and it makes you puff and sweat, where are you going to be by the time you're 30?

You feel that working out and improving your looks go hand in hand?

Oh, yeah. Anybody that sticks with it. You don't necessarily end up looking like Raquel Welch or Rachel McLish, but working out improves your self image and mental attitude; you have more energy. We had a lady who was an alcoholic and had had a nervous breakdown. She slept 15 or more hours a day. And her husband brought her in to see us. She had to be coaxed, so every excuse she came up with, I'd counter with why she should just try it. Gosh, she was just a totally different person. Turned her whole life around — hers and his. Where before she'd been sleeping all the time and staying in the house, overweight and crying, now she'd be the first person at the gym every morning. She took on baby-sitting jobs. She just became a happier person. These kinds of transformations are so commonplace that I don't even think about it.

What's your workout these days?

I do exactly what Bill does. But I don't work forearms and neck. I work as long as he does except for about 20 minutes (2½ - 3 hours).

•

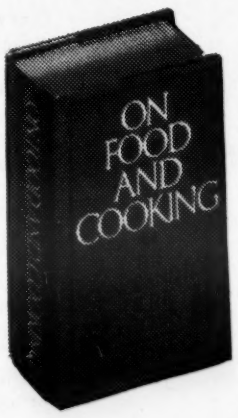
What about working out in relation to your job? How about priorities?

My mental acuity is so much better when I'm running or exercising. Let me put it this way, I consider staying in shape as my first priority other than the family. So I'll schedule my workouts first and then work backwards into the business, and somehow the business always seems to get done. Whereas if I went the other way, I know I would get into business lunches and competing demands on my time. I just establish standards for myself and the people that want to see me . . . "No, I don't go out to lunch. If you want to have a lunch with me, let's go out and run."

On Food and Cooking

It's an incredible task to write an encyclopedia, but Harold McGee carrries it off. He has written a summary of what the world knows (well, what the West knows; he only had 684 pages) about the science of food. Each kind of food — plant and animal — is discussed, its history, and all the ways of cooking and brewing that we use. McGee makes complexities comprehensible: He uses technical terms and he explains them simply and lightly. He makes accessible the knowledge about food that our culture has gained in the last several millenia. Cooks cannot stop reading this book; they mutter, red-eyed, "Just one more page!"
—*Birell Walsh*

On Food and Cooking
Harold McGee
1984; 684 pp.
$29.95
from:
Charles Scribner's Sons
Macmillan Order Dept.
Front and Brown Streets
Riverside, NJ 08075
or Whole Earth Access



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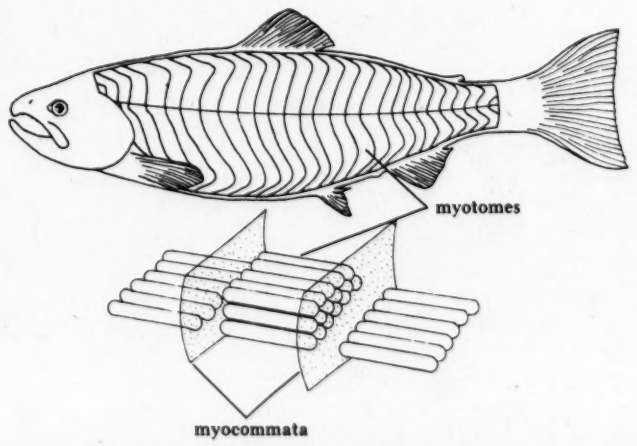
There is very little connective tissue in fish — about 3% of its weight, as opposed to 15% in land animals — and what there is is very fragile and easily converted to gelatin. The combination of sparse, weak connective tissue and short muscle bundles results in the great tenderness of fish, and its troublesome tendency to fall apart altogether during cooking.

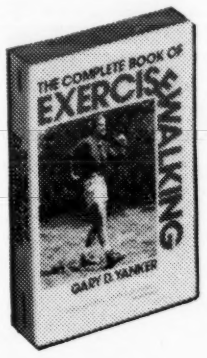


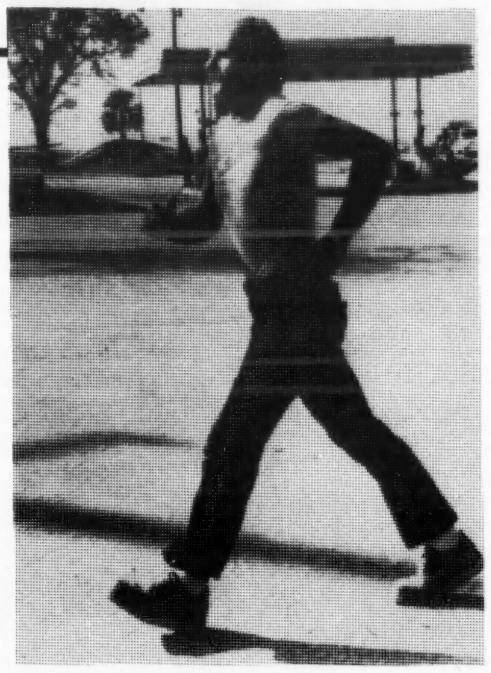
Unlike the muscles of mammals or birds, fish muscle is arranged in layers of short fibers — the myotomes — which are separated by very thin sheets of delicate connective tissue — the myocommata.

Exercisewalking

Attention joggers: When your joints give out (and they will), keep in mind that walking (quickly) is surpassed only by swimming as a whole body workout. To earn as many aerobic points as you do running, you'll have to walk up hills or stairs, or carry weights, or spend more time moving. This book tells how. It's a lifelong exercise. —KK

The Complete Book of Exercisewalking
Gary D. Yanker
1983; 266 pp.
$9.95
($11.95 postpaid) from:
Contemporary Books, Inc.
180 North Michigan Avenue
Chicago, IL 60601
or Whole Earth Access





Aerobic Walking

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Walking is the most natural function of the human body. Because of the structure, shape, and flexibility of the spine, we are better constructed for walking than for sitting, standing, or running. The human body is a perfect walking machine. When we walk, the skeletal and muscular systems perform harmoniously together and create a near-perfect balance between gravity's pull and our forward motion.

•

A mile of walking is worth more exercise if it is part of a series of miles walked in succession than if it is walked discretely with longer than 10-minute rest intervals in between. (Cooper, 1982)

A Quick Test for Fitness Level of Aerobic Walking

Fitness Levels	Walking Speed (mph)	Time Heart Rate Takes to Reach Training Zone (minutes)
Excellent (V)	5-9	3 or less
Very Good (IV)	4.5	3-3.2
Good (III)	4-4.5	3:20-3:45
Fair (II)	3.5-4.0	3:45-5
Poor (I)	3	Over 5

Choose your approximate fitness category and walk 440 yards (quarter mile) at the prescribed speed. Measure your heart rate right after walking so you get as close as possible to your actual heart-rate training zone while exercising. You may have to do this more than once. Knowing your aerobic fitness category, you can then choose an aerobic training program to fit your level and work from there.

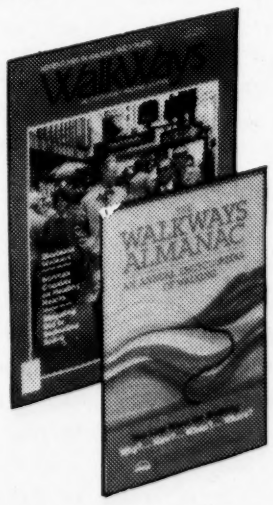
WalkWays

A newsletter for the leisurely paced world of walking: new shoe designs, legislation to assist pedestrians, and listings of organized walking tours. Most issues feature recent scientific findings that boost morale for such an unfashionable sport.

From the same nonprofit organization comes a wonderfully handy almanac scouting out walking resources. Volkswalking (noncompetitive group walks) may be just the remedy for an overdose of marathon madness. They've got the calendar of events. —KK

WalkWays
Arnold Sagalyn, Editor
$17/year (8 issues)

The Walkways Almanac
Louise E. Sagalyn, Editor
1986; 64 pp.
$4.95
both from:
The WalkWays Center
733 15th Street, NW
Washington, D.C. 20005



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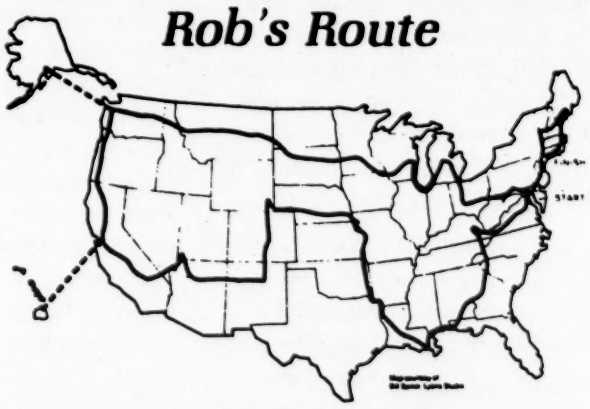
Well-made walking shoes are designed with several features that distinguish them from conventional running shoes. For example, the orthotic fitted inside the shoe works together with the support provided by the rocker-shaped outersole to cushion the foot's impact during the walking motion. A firm heel counter extending far forward into the shoe ensures lateral stability.
—Walkways Almanac



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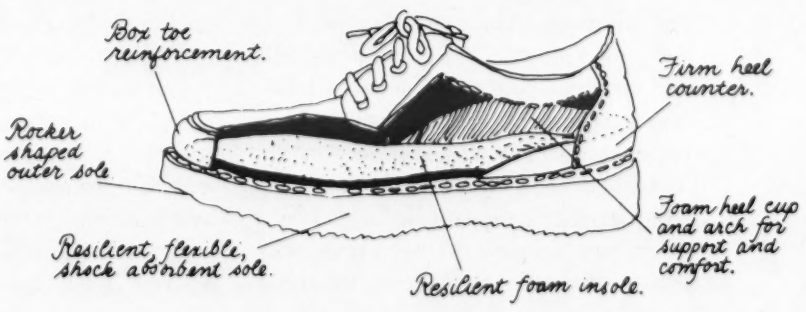
Preliminary results of tests made on Rob Sweetgall during his epic 11,600 mile walk through 50 states in 50 weeks reveal an appreciable increase in his cardiovascular fitness level. . . .

He can achieve 100 percent of his maximum predicted heart rate during walking tests in our laboratories. He has also lost fat, but not lean muscle, and the efficiency of his walking stride appears to have improved.

In addition, it should be noted that he has not sustained any significant injury pattern, despite the constant pounding during 8-10 hours of walking approximately 30 miles each day. —Walkways



Backscatter about the Farm, *a commune in Tennessee that sheltered 1,500 persons at its peak and now harbors 280. It was considered the most successful commune to emerge out of the sixties. Several issues ago (WER #49, p. 56) eight long-time members of the legendary commune explained why they were among the many who had left in the last few years. In response to that interview, letters from other former members flooded in, represented by the two here. See also the story "A Commune That Works, So Far" on the following pages.*

No regrets

I read your article, "Why I Left The Farm" (WER #49, p. 56) with great interest since I lived on The Farm myself for about 12 years and left in the Spring of '84. I also edit and publish *Farm Net News*, a bi-monthly newsletter for folks in the Farm network, on and off the Farm.

I know all the folks who were interviewed in your article and feel good friends with them. And I know that all the stuff they talked about — the food shortages, the ego trips, the mistakes — were all true. But while I was reading the article, I kept feeling like someone had missed the point. I wasn't sure if it was the interviewees or the writer when he edited the interview. But someone along the line had overlooked the fact that all those hardships were some of the most important and valuable things about The Farm experience. They weren't always fun, and they weren't always necessary — I think we could have been a lot smarter about our priorities and about living our original agreements — but they were great for personal spiritual evolution, and that, after all, is why we're here, n'est-ce pas?

I'm a single mother. I raised my two kids on The Farm, and I'm very grateful to Stephen and everyone who ever lived there for making that whole amazing thing happen. I can't think of any place I would rather have raised my children. Sure, you're pretty poor when noodles are a special treat, but I *never* felt my kids were being deprived there. They got so much, on so many planes, from so many people, that the material scarcities were a minor part of the experience. My "kids" are now 18 and 23 years old, and they are sensitive, compassionate, socially-aware human beings. Growing up on The Farm had a lot to do with that. Who cares if they didn't have noodles very often?

I'm not saying The Farm diet was okay — it wasn't. What we preached and what we practiced were two different things. I'm just saying that the important stuff that happened on The Farm wasn't material — it was spiritual. The original teachings The Farm was founded on were true, and those who did their best to live them got their rewards in personal growth and expanded consciousness. Ex-Farm folks from all over the world write to me as editor of *Farm Net News*, and although the paper serves as an open forum for unresolved feelings about The Farm, the majority of the letters I receive reflect gratitude for The Farm experience — despite its shortcomings.

We may have fallen short of the very high ideals we started out with, but The Farm sure came a whole lot closer to them than anything else that was happening! And it's still there, going through its changes, righting the wrongs of its youth, and maturing into a viable new age community.

Peace and love,

—Sylvia Anderson
Farm Net News
12177 Auburn Road
Grass Valley, CA 95945

Building an instant class system

I was a member of The Farm for nearly ten years, and I have a few comments on your article about why people left.

First let's talk about hierarchy. Walter touched on this when he said he had to kiss ass to stay part of Stephen's inner circle, and I would like to offer some further insights into this. The hierarchy went something like this: first there was Stephen, then his immediate family, then their closest associates who were mostly people who held managerial positions, midwives, members of the band, heads of crews, etc., and their spouses. I will refer to this group as the elites, for want of a better word. From the credentials of those you interviewed, you may perhaps deduce that they were all members of this elite group. Someday I would like to see an article on the Farm in which the credentials of the people look something like this — "So and so pumped outhouses on the Farm for eight years and now is unemployed in Daly City." I do not have a thing personally against any of the people interviewed. Just trying to point out that they are not really representative of "The Farm."

Anyway, the people in the elite group (which probably numbered no more than a hundred or so) were the ones who had access to cars, money, dope, travel, and got to be the ones to represent the Farm to the outside world and to the media. (Reporters were never taken out into the woods to interview a single mother living in a schoolbus or a tent, they were taken to the nicest homes to interview the most articulate of the members, those who would speak of the Farm only in the most glowing and positive terms. This is why the word didn't get out that it was falling apart.) The people in the elite group were the ones in positions of power on the Farm. And in spite of Stephen's professed anti-intellectualism, I'd say that a disproportionate number of them were college educated (and men). These people made the decisions about how money was spent, who got to do what, and so on (although their decisions could be overridden by Stephen).

Then there was everybody else. These were the people who hoed the fields, made the tofu, hauled the firewood, banged nails, ran the laundromat, all the day-to-day, no-glory-type jobs. These people did not have easy access to cars, money, dope or Stephen, and they were not usually the ones interviewed by the media. They were not the ones who got to go to foreign countries or other places to represent the Farm. And they were the ones whose opinions were not listened to, although they frequently had good ideas and valid criticisms.

The Farm offered the illusion that everyone was equal and that everyone participated equally in decision making, but this was not really the case. It wasn't even majority rule, although it may have appeared that way because most people quickly learned not to disagree with those in power. A few people made the decisions and everybody else went along. People who expressed dissatisfaction or disagreement often found their lives becoming more difficult. Perhaps they wouldn't be able to find a place to live or wouldn't be able to work at a job that they wanted to do. Perhaps a committee would show up to tell them that they would probably be happier living elsewhere. And just as Walter couldn't tell Stephen he was on a trip, who you could tell about being on a trip depended on where

you were in the hierarchy. It wasn't really acceptable for someone with no social position at all to walk up to someone in the "inner circle" and say, "Hey, I think you're on an ego trip."

Even individual households often had their hierarchies. People who were considered to be "more together" than other people, usually "together" married couples (they didn't fight in public) would get to say how things were to go in that particular household. Then came "untogether" married couples, single women, single men, single mothers, and "trippers" (in that order). Those who didn't go along with what was expected of them soon found themselves looking for another place to live.

Maybe it's human nature to organize into hierarchical forms. Maybe nothing at all would have gotten done without some hierarchical type of organization. Maybe if there had been too much individualism, things would have fallen apart in the first year. I don't know. But we were all supposed to deny that any such thing as hierarchy existed.

Same with sexism (which wasn't even mentioned in your article). I never cared that much about whether we had processed foods or modern conveniences. I think the dissatisfaction with the material plane became more intense as we realized that we really were not living that differently from the outside world, so why shouldn't we have some of the benefits of the consumer society. What I cared about was that I was raising my kids in a patriarchal, sexist community which was supposed to not be that way. We kept saying it wasn't, but it was.

Here's how it went on the Farm. A fairly typical household might have consisted of 30 people. Of these 30 people, there would be about 15 kids, seven or eight men, and six women, at least one of whom would be either pregnant, nursing, or sick. The men got up in the morning and ate breakfast, which had been prepared by one of the women. Then they went to work. The women then figured out who would stay home to take care of the children, do the housework, round up groceries (no mean task in itself), do laundry, take care of sick folks, and cook. Each household was also supposed to send representatives to help with the soy dairy, the bakery, food preserving, farming, and so on. The women usually did that, because the men had "jobs." Even women with no children were expected to take their turns at all this. Day care was pretty much nonexistent. Same with neighborhood playground facilities. School was half-days. If a woman wished to work outside the home, she had to arrange babysitting trades with other women. The only exemptions to this were midwives and schoolteachers, whose work was considered essential. Obviously most women were unable to work at any job outside the home enough to reach a managerial position. Women who tried to break out of these roles and develop some kind of a career were told that they were being too "yang," or too "career-minded," or were reminded that it was their "holy duty" to take care of the men and the children. Women who got angry or emotional about their situation were told that they were "just hormone-ing."

So under this system the people who were in managerial or decision-making positions were usually men. They were the ones who decided how the community's money would be spent. Since the women did not usually contribute directly to the earning of money, but rather took care of the life support systems, they did not have an equal say in how the money was spent. So while the men were off at work with the computers, or backhoes, or recording studio, or whatever, the women were at home taking care of the kids often without running water, toilet paper, or ingredients to cook with.

Now on to sexuality. Premarital sex was forbidden, unless special dispensation was obtained from Stephen. Extramarital sex was supposed to be forbidden, too. Same with masturbation. Homosexuality was not considered to be a viable expression of sexuality. (I believe that Stephen's theory was that men had a positive charge and women had a negative charge, and you got off best if you put a positive and a negative together, like in electricity, and preferably within the bounds of holy matrimony.) Divorce was frowned upon. Birth control was chancy, and abortion was murder. Now this might not have been so hard to take except for the fact that Stephen felt free to hug and kiss any woman in the community and was himself involved in a somewhat unorthodox marital arrangement. He wasn't always married to Ina May. He started out married to Margaret (actually I think she was his second or third wife). Ina May was married to a man named Michael. Stephen and Margaret got four-married to Michael and Ina May. Then they all got six-married to Thomas and Louise. Then Michael

split. Ina May had a couple of kids by Stephen, then Stephen divorced Margaret and married Ina May. Thomas divorced Louise and married Margaret. But they still all lived together. Then Louise had a kid by Stephen. So who was this guy to be telling people who they could and couldn't sleep with?

As far as the abortion ad was concerned, I personally was told by Ina May that if I didn't straighten up and decide to keep my kid, I could just go have it in the hospital somewhere. We were told that a woman who had an abortion would feel guilty for the rest of her life, and that mechanical and chemical forms of birth control weren't cool because they interfered with the "life force." Does this sound like some kind of fundamentalist religion to you? This was supposed to be a "new age" community.

There were other ways in which we created a class system. One was that people could get gifts from relatives living off the Farm. These gifts ranged from toys for the kids to bicycles, eyeglasses, dental work, on up to houses. Instant class system, since not everyone had relatives who could or would send them anything. The second way was that people could get a Saturday job in town and keep the money; originally it was for housing, but later it became used for everything. However, not everybody had access to a Saturday job in town, or a car or gas money to get there if they did find one. Instant class system, again.

Why did we stay? We stayed because we kept believing that if we just hung in there and tried hard we could make it work. We stayed because we couldn't figure out how to leave with no money and no place to go and maybe a couple of little kids. We stayed because the alternatives didn't seem much better. We stayed because sometimes it was really fun.

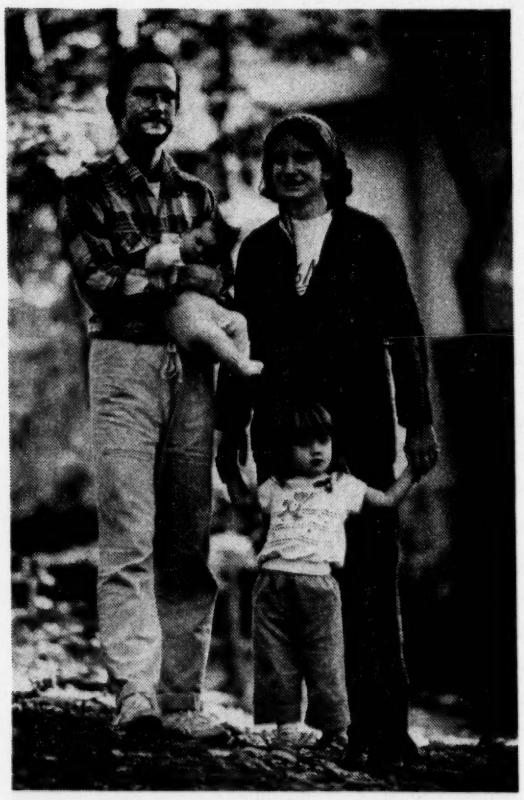
This is my version of why people left. I'm sure everyone has their own story to tell. I hope we can start to talk about what really went wrong, so that other people who are attempting to live in community can learn from our mistakes, and so that we can too, when we get over this experiment enough to want to try again.

—Ellen Rainwalker
Olympia, Washington

A COMMUNE THAT WORKS, SO FAR

by Kathleen Kinkade

I SUPPOSE ONE REALLY NEVER KNOWS if it's safe to go public with a statement that a commune "works." There will always be a cautious voice to say that it's too early to tell. After all, Oneida Community lasted nearly 40 years before its demise. Twin Oaks, where I live, is merely 19 years old, so I may be premature in boasting that it works. But I'm going to take the risk. At worst, I will someday look back on this article with a wry face. At best, I can share some of what we've learned and provide some signposts at the crossroads of decision-making. We are probably not going to be the last people ever to try communal living.



Twin Oak commune members Dondi and Novagene, with their two children born on the commune.

I am inspired to this writing by the article that appeared in *Whole Earth Review* (#49, p. 56) about The Farm in Tennessee, written by a group of disillusioned ex-members of that organization. I read the account with acute and sympathetic interest. What shouts from those pages is a very simple lesson: "Poverty as a way of life will kill the commune." The article also had things to say about the unwisdom of following a guru and the ex-members' acquired realism about membership selection, financial management, ratio of dependents to workers, and the like. There wasn't much in that article that my own years of experience didn't back. I found myself nodding and saying, "Yes, that's right. That's the way it is."

But the failure of The Farm doesn't prove that success is impossible. Suppose there were a community that didn't depend on a guru, that was careful about whom it admitted, and that distributed work equally. Would it succeed? The available data is discouraging. Among the abandoned wreckage of communal dreams are more leaderless groups than guru-inspired ones, by a wide margin. Nor does prosperity insure success. Oneida was quite rich when it faded away. So was Amana. As to membership selection, I have seen three communal efforts collapse as a direct result of tight selection practices, because some core members left and were not replaced.

As Twin Oaks approaches its 19th birthday, we can take a thoughtful look over the road we've come. Not all the evidence is in, but by most standards we're a modest success. Never in those 19 years has any member lacked food or medical care. Our housing and clothing standards don't satisfy us yet, but they're improving. We've grown from eight to 80 people; we have built ten major buildings, including a central kitchen and dining room. Our kids lack nothing and are in most cases better educated than they would have been in separate families. Our social security is total, cradle to grave. We take care of each other in the profoundest sense. Our lives are busy, active, and interesting. And we have managed all along to keep our door open to new members who meet minimal standards of compatibility and willingness to work, all this with a common treasury and no private capitalism to speak of. No guru, either. Our leaders, when we have had any, have been the ordinary political variety you could follow if you chose, and if not, you could oppose, depose, or ignore.

So maybe it isn't out of place to assume we're

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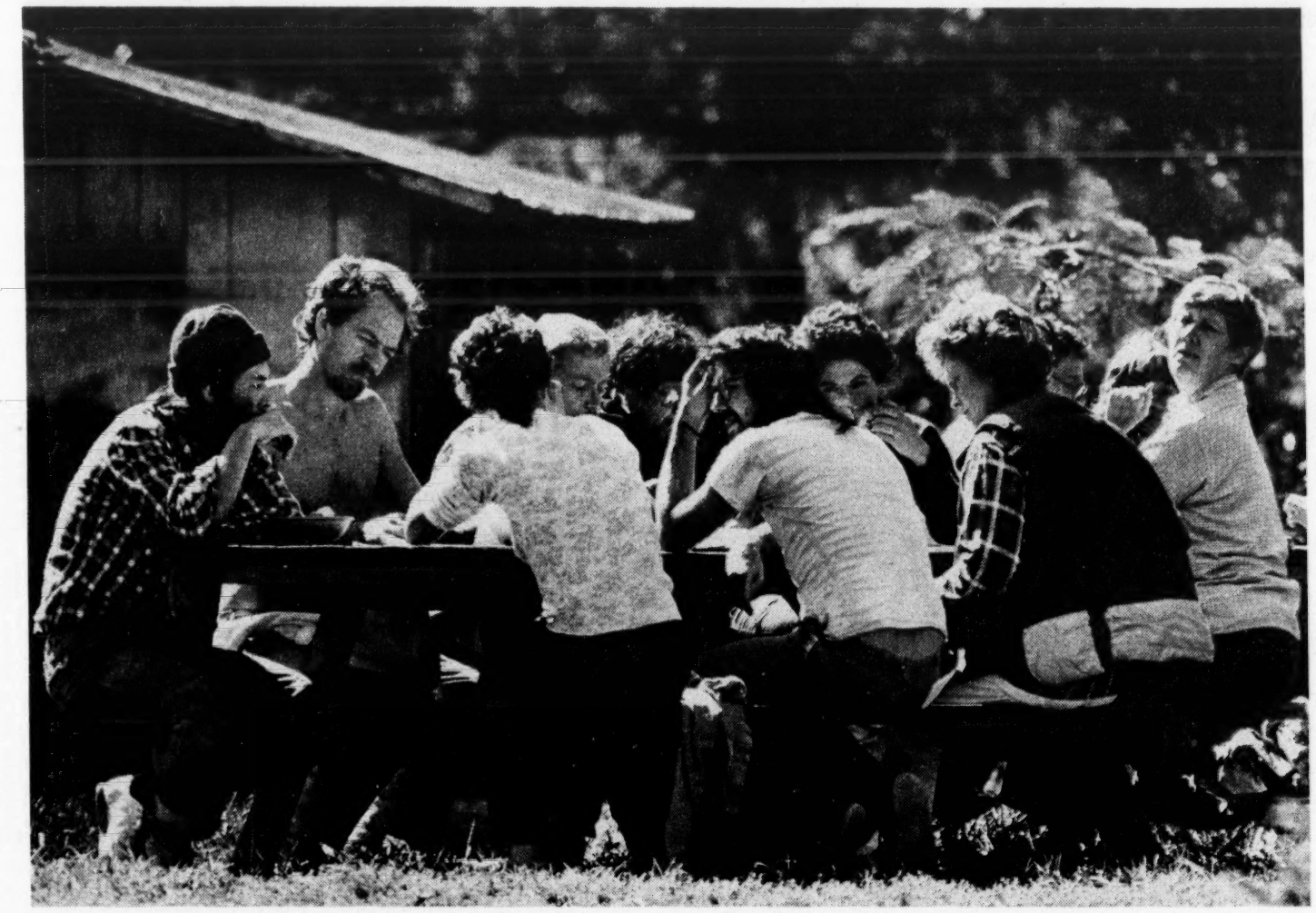
*Kat Kinkade is one of the founding members (1967) of Twin Oaks commune, in Louisa, Virginia (703/894-5126). She spent nine years there, and another five at East Wind, Twin Oaks' sister commune in Missouri. Of the several responses to the Farm article (*WER *#49, p. 56) that we received from contented communards, hers was the most tempered with experience.*

—Kevin Kelly



Communal meals are part of the lifestyle. Cooking is done by those who choose that for their work credit. Washing dishes afterwards, and cleaning bathrooms, are the only two jobs assigned on rotation.

making it and to speculate on the reasons. I think there are maybe 20 big decisions every commune has to make, and if you get a right answer to about 12 of them, you win. You can afford to be wrong on the other eight, because there isn't any one right recipe, and even the definitions of success are pleasantly flexible.

Take, for example, the matter of getting the work done. Our watchword was "equality," and we went to enormous lengths to be sure that all our work was distributed as evenly as possible. We've had a lot of theoretical discussions over the years on such matters as whether the untrained have as much right as the skilled to a given task, and whether we should assure a 50/50 assignment of the sexes to various crews. I don't give this stuff much credit for our survival; it's just one of the fascinating aspects of our particular culture. What is vital is that work got done and that those who shouldered a lot of responsibility didn't feel so ripped off that they left with no one to take their places. I can imagine a dozen different systems that would accomplish that. I know other successful groups that have answered the work question in ways quite different from ours. What we share with those groups is that we make sure the work gets done and that we feel okay about its distribution.

Okay, that was number one. Getting the work done without feeling ripped off. There are a bunch of others. For instance, we keep enough money coming in. This is easier said than done if you're rural. We had, and still have, no business geniuses among us, and we're still not rich. What we have learned and practice is this: Find something that looks like it might work, go at it with diligence, take some risks, *put about half your total work force on it,* and you're likely to be able to make a living. That's a grim picture for two reasons. One is that the other half of the work force probably has babies to take care of, and the other is that it is sales, not production, that requires the initial efforts in most businesses, and selling ability isn't common among us.

Twin Oaks' day-to-day labor demands aren't too bad these days, because we have fewer than 20 children, so the people who aren't bringing in money can be doing the other necessary tasks. Besides, the sales efforts are behind us now. At this point, we can afford to keep only a third of our labor force in moneymaking activities. I don't by any means think Twin Oaks is a model to follow for income production. We did the best we could, and we are economically secure enough, but there are probably better ways for other groups. What we did right, though, was to resist the impulse to try to live off the land (penicillin doesn't grow on trees; neither does gasoline) and faced the necessity of making money in the nation's marketplace. Another feasible way is to work at jobs in cities (we did that for a few years as a stopgap, and we sure

Making parts for the commune's major cash crops — hammocks and oak-framed chairs with seats of woven rope. Auxiliary income comes from indexing books for outside publishers.

don't recommend it if there is any alternative).

One way or another, the group has to have enough cash to provide the kinds of things that its members consider essential.

We maintained a communal economy. The essence of the benefit of pooled resources is that once you have spent what you need to for the basic maintenance of the group, what you have left over is a big enough lump of money to do something significant with. If you divide up the money and distribute it to the workers, each worker's ambitions are limited by the small amount of the resources. In such an economy there are lots of tape players and bicycles. But in a communal economy, the "surplus" money pile is big enough for something that serves the whole community. Such a community has sidewalks and sewage treatment. Eventually it gets tape players and bicycles, too, but not until the group feels that it has luxury money. One might think it could work just as well the other way — first buying the individual luxuries, then taxing for the big-ticket items. One reason it doesn't is that when members leave, they can take their small purchases with them, but the sidewalks stay put.

We held the line on consumption. Twin Oaks' early leaders were very stingy with consumer goodies. Most of the surplus cash, when we had any, went into buildings, tools, and business investment. That same conservatism, though loosening somewhat in recent years, is still basic to our financial thinking. We produce more than we consume, and we put large chunks of the surplus production into permanent improvements. If we didn't have a common purse, we wouldn't be able to do that, because there wouldn't be enough cash to do it with. The lack of basic facilities, like utilities and public buildings, would in turn discourage serious communards from choosing our way of life.

We keep the door open. The lifeline of Twin Oaks Community is its visitor program. One major way that Twin Oaks has not succeeded is that we have not figured out a way to keep the same people here for their whole lives. Some stay only a few months; a third of us have five to ten communal years behind us; and the average is around four years. We console ourselves by saying that this is somewhat longer than the national average for our age group. We feel saddened by this, nonetheless, and we keep trying to find ways to "cut turnover," as we put it. Until we do, it is vital to our survival to keep replacing the 15 to 18 people who leave each year with new members, all of whom must be tested for compatibility by living with us for a while. Thus, the visitor program is a given in our lives.

We don't accept badly screwed-up people. We have learned that we cannot cure emotionally disturbed people, and we send them away when they come through. This was a tough decision to make, but it was the right decision. Experience quickly showed us that forcing ourselves to live with people who made us uncomfortable cost us us far, far more than any good we might have done for them. We no longer have any notion of ourselves as a therapeutic community. This certainly doesn't mean that a therapeutic community couldn't work — for people who choose to do just that. But we can't do that and everything else we've elected to do.

We leave people's minds alone. In spite of the standard liberal beliefs listed in our documents and implicit in our policies and customs, we really do not insist on intellectual or spiritual conformity. We are based on ideals of equality but have members in good standing who think equality is nonsense and say so. What we do instead is base our policy-making on some reasonable but compromised version of the equality idea and try to get people to go along with it. We are, as a group, nonsexist, nonracist,

nonageist, noncompetitive, and so on. As individuals we vary a whole lot on all of it. We also vary on the degree to which we think we ought to be striving toward our ideals. In fact, there is almost nothing we don't have a variety of opinions on. When this becomes clear to outsiders or new people, they ask with bewilderment, "But then how can you come to agreement?" The answer is that we don't. We manage pretty well without it. What we have instead is widely delegated control of some of the basics, a substantial body of useful tradition, a general habit of most of us going by most of the rules most of the time, and a lot of giving in to each other on small matters in order to make our whole community effort work.

What does this intellectual autonomy do for us? Its major benefit is that it allows us to attract members who could not tolerate living in a more dogmatic environment. These independent spirits come with a wealth of energy for the community that would not be available in a more conformist atmosphere.

A communal day-care center minds the youngest of the 16 commune children. Members are assigned 47 hours of work a week. That includes time spent on child care, laundry, cleaning chores, and income-producing tasks. The rest is free time, enough for relaxing with music.

Nevertheless, we offer many of the solaces of mutually held belief systems in small circles within the larger group. A women's group is very active among us these days, as well as a great deal of co-counseling activity. In other years, mutually supportive small groups have revolved around various spiritual themes or therapeutic ideas. Throughout our history a solid and vocal majority has faced us with issues related to equality, environmentalism, and other broad concepts. It is a rarity to have a member who votes Republican. But it's not an expellable offense.

We compromise on everything. I'm not sure why I think this is a survival technique, but I sense that it is. Maybe it's because members who can't compromise generally leave us for what they call ideological reasons. We tend to attract, select for, and create tolerant people. People with rigid standards seldom apply for membership, and if they do apply are usually advised not to join.

Compromise hasn't always been a Twin Oaks watchword. In the early years, we tried to stand true to various principles. But if we had been rigid about it, we would have lost too many members at once, and the community would have died young. In order to keep on going, we made hybrid policies based on whatever the current members would accept (including what our ideals could stomach), and the pattern hasn't changed much. Somewhere along the line we stopped being ashamed of it and started boasting about it.

The probability that every major decision will be a compromise provides a feeling of safety. If somebody should propose that we double our population by having new people live in old schoolbuses until we can get housing built, community conservatives wouldn't get very worried about it. They might be irritated at the misplaced enthusiasm, but they would know that, once we've had meetings and position papers and budget reviews on the subject, the likelihood is that we might get at most one house trailer. Probably they won't like the house trailer, but it is a long way from a fleet of schoolbuses. Or if someone proposes a community-wide bonus of $500 each at the end of the year, the financial conservatives may be quite indignant, but the $100 bonus that eventually is squeezed out the tube of community process will not severely threaten their feelings about the community. Nor will it likely disappoint the proponents of dispersed income, who didn't seriously expect much more than that. We are accustomed to compromise.

We have systems. Twin Oaks is unabashedly organized. There is an irony in this, because we may be some of the freest people on earth. There are enough byways and loopholes in our systems to make almost any activity possible within our structure.

(There are some exceptions, like making a personal fortune or tooling around in a big car, and there are things one has to wait for, but there is a lot to occupy us while we wait.)

The main dining hall (left). A dormitory-style residence that accommodates 18 people (right).

True, we have to fill out and turn in a labor credit sheet that tells what work we did each week. But in exchange for that five-minute-a-day job, we have flexibility in our work schedules unmatched by any lifestyle I've ever heard of. True, also, that we have to deal with the nuisance of working out transportion with other members going in the same direction, or signing up for the big living room when we want to show some slides, or moving our personal belongings three times before we get the private room we've had our eye on. But in exchange for these nuisances, we are able to make multiple use of our vehicles and living spaces and get a lot of amenities on an income which technically registers at $6,800 a year each.

We didn't set out to create such a complex organization. It was no part of our initial idealism to have a massive underbrush of committees, crews, teams, councils, managers, and whatnot to keep our communal lives in order. We just created them as we saw the need, and there they are.

Twin Oaks traditionally sees organization as an obvious problem-solving technique. If a member flips out one day and starts driving everybody nuts with his manic fantasies, it is the Health Team that meets and schedules round-the-clock sitters to keep him under control until he comes out of it. The impulse is compassion for the member and concern for the community's normal functioning. The method is to organize volunteers and pay them with labor credits, like other work. If we didn't have a Health Team, maybe this would be done by his friends, but they would burn out in a few days and feel somewhat exploited by the group. As it is, the community underwrites thousands of compassionate impulses with its labor, which we all do without thinking about it. What keeps us from being inundated by such demands? That same Health Team draws the line when needed. Multiply this health care example by the thousands of cases of individual needs met by community effort, and you begin to understand the reason for all the organization.

Do I claim that this bureaucracy is a survival characteristic? In a sense I do. I claim that it is a safe alternative to strong leadership. What is wrong with strong leadership? For one thing, able leaders are not very common. But a bigger problem is the likelihood that their inspirations may be wrong.

The Twin Oaks political environment is one in which it is absolutely essential to listen to the opinions and warnings of every concerned member. The most our leaders can do with their inspirations and convictions is to learn to promote them through the established channels.

We are much too big to allow individual initiative to determine the placement of our buildings and roads, the rate at which to accept new members, the desirable expansion of a given business, and other long-range decisions. This is fairly obvious, so I won't go into detail, except to say that our cheerful acceptance of the necessity of organization allows us to be a big community.

Which leads to another survival characteristic: size. Small groups have to be very lucky to survive if they have any significant membership turnover. I have heard of small groups without turnover, but it's not the norm. Bigger is safer. Even The Farm in Tennessee, for all its conspicuous failures, still provides a remnant of community for those who survived its changes. Twin Oaks went from its original eight members up to our present 70-plus just as fast as conditions would allow. During several years of treading water while the national media lost interest in us, our sheer bulk kept us from going under. It would be hard to kill Twin Oaks; there's too much of it. We've got those bylaws that prevent anybody making a profit from dissolution, for one thing; and all those diehards who refuse to give in when things get discouraging; and then there are the people who come in with fresh enthusiasm. If Twin Oaks lost 30 people tomorrow morning, we would be very, very upset, but we would not go under. If we got hit with some kind of bill for half a million dollars, we would be very discouraged, but we would not cease to exist. We would adjust and keep on going. We have no guru to tell us when it's all over, and a very low probability of agreeing to dissolve. I suppose we might compromise, but the compromise would leave us a remnant, and that remnant would rebuild Twin Oaks.

We teach. There is so much to be done here, and no way to attract and keep true professionals in every field, even if that were desirable. Of necessity, we are constantly training people in a variety of interesting activities. We are always doing most of the following: auto maintenance, child care, construction, utilities maintenance, purchasing, cooking and baking, darkroom work, administration, forestry work, business management, gardening, publishing, home births, computer work, furniture and cabinetmaking, driving, warehousing, health care, building maintenance, dairy work, indexing, choral singing, folk dancing, tai chi, dramatic productions — you name it, we do it. It would be difficult for even an incorrigible dilettante to go through everything Twin Oaks has to offer in less than six years. For anyone willing to become professional, there are several lifetime careers to pursue.

We change. We never allow Twin Oaks to stagnate for very long. If we have money, we frequently build a needed building; if we don't, we work on something else, like improvements in our culture or government or business or recruitment or interpersonal relationships. Usually we move ahead on both material and social fronts at the same time. Is this necessary for survival? Certainly it keeps some of us from being bored. It provides a feeling of being part of something vital, something to which each member can have input.

At this point the line grows fuzzy. How much else of what we are is necessary for our survival, and how much is just a loving description of Twin Oaks? We don't really know. There are probably people here who would leave if we started wearing bathing suits in the river, and there may well be people who would have joined if only we were closer to a big city. Everything we do selects, for or against us; we learned that long ago.

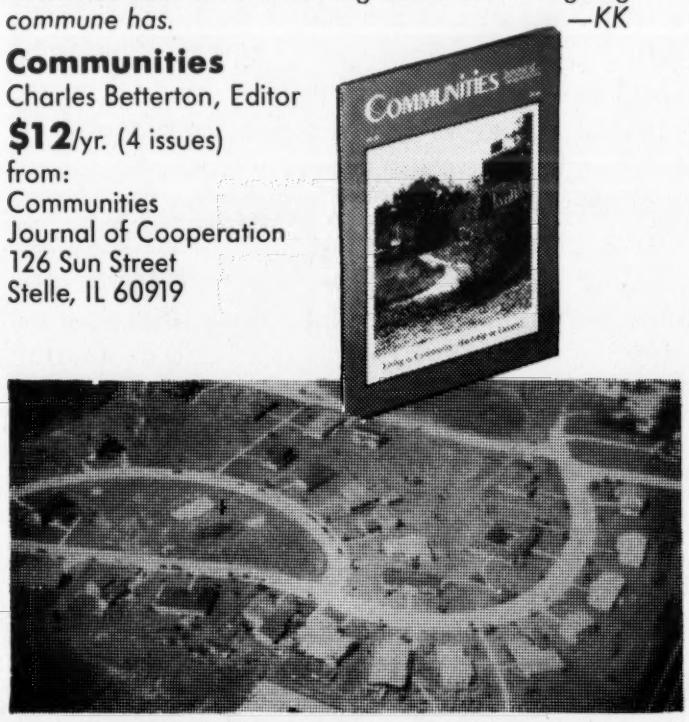
Will we make it? We don't know that either, but it looks like it to me. True, 19 years isn't long, and we aren't very big or very important. Just the same, Twin Oaks really is fully communal, and it really does work. I'd give it another 50 years easy. ■

A small kitchen annex serves for a close-knit group of 20 who rotate cooking chores.

Communities

These days communes are not what they used to be. To find out what they are becoming, read this journal, which has been around as long as the oldest ongoing commune has. —*KK*

Communities
Charles Betterton, Editor
$12/yr. (4 issues)
from:
Communities
Journal of Cooperation
126 Sun Street
Stelle, IL 60919



About 75 miles south of Chicago, in the heart of the great American corn and soybean belt, lies a small community of 44 houses and around 125 people. . . . The houses are typical of the suburban middle class, set in sweeping lawns and connected by curving paved streets and sidewalks.

This community is Stelle, Illinois. A closer look at Stelle reveals that it is very different from a typical suburban community. It was started in 1973 by Richard Kieninger — a man who rejects traditional religion and says that he was directed to build his city by invisible "Brotherhoods" in preparation for a doomsday in the year 2,000 that would destroy 90 percent of humanity.

Community Referral Service

A) Communities seeking new members publish their circumstances in this complete directory. B) Potential members seeking to join an established commune broadcast their solicitation in a monthly contact sheet that goes around to all the communities. C) Those searching for other commune-bent individuals connect up. Friendly service, run by a commune, of course. —*KK*

The New Age Community Guidebook
Bobbi Corcoran, Editor
1985; 112 pp.
$7.00 postpaid from:
Community Referral Service
P. O. Box 2672
Eugene, OR 97402

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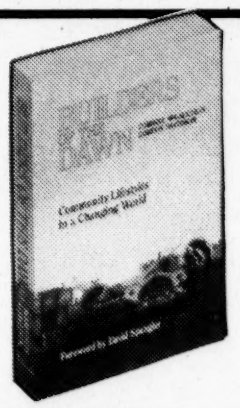
Lama Foundation
P. O. Box 240
San Cristobal, NM 87564
(505) 586-1269
M-F, 9-11 a.m., MST

Est. '68. Serves as an instrument for awakening individual/collective consciousness. Residents follow different spiritual paths, understanding that all beings and paths are One. Self-supportive through offering summer retreats with visiting teachers, silk-screening prayer flags, pottery and publications. 2 hermitages for rent year round. 110 acres in forested mountains, wood heat, outhouses, limited electricity. Closed to visitors October - April, otherwise open to visitors on specified Sundays. Family/single dwellings, structured daily schedule, communal meals, work, prayers, meditations, song and dance. Open to new members. Write and call for details.

Builders of the Dawn

This comprehensive gathering of interviews, guidelines, and analysis proves that experience more than theory is designing the current evolution of American communes. Pass through this accumulated advice first if you are headed for an intentional community. Dwell here if you intended to manage one. —*KK*



Builders of the Dawn
Corrine McLaughlin and
Gordon Davidson
1985; 372 pp.
$12.95
($14.70 postpaid) from:
Stillpoint Publishing
P. O. Box 640
Meetinghouse Road
Walpole, NH 03608
or Whole Earth Access

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Some comparisons: '60s Communes/'80s Communities

1960s

- Freedom and "doing your own thing" most important value; "laying a trip" on someone is a cardinal sin
- Few rules, restrictions, or expectations; largely unstructured; "work only if you feel like it"; spontaneity highly valued
- Mainly alternative lifestyle and values — drugs, rock and roll, "free sex"
- Non-exclusive; usually anyone with same lifestyle can join
- Visitors not always requested to contribute money or labor; no formal guest programs
- Return to a romanticized rural past; rejection of technology; few communication links with society
- Return to innocence of childhood; rejection of responsibility

1980s

- Cooperation with others and "the good of the whole" important; everyone needs to contribute his/her share; erratic behavior less acceptable
- Agreed-upon rules and expectations; fairly structured work and financial requirements
- Variation in lifestyle in different communities — ranging from alternative to middle-class professional
- More restrictive about membership — must be harmonious with group and committed to group's purpose
- Visitors usually requested to contribute money and/or labor; more structured guest programs
- Closeness to nature highly valued, but appropriate technology also welcomed; more communication links with society (telephone, TV, radio, some computers)
- Generally more mature and reponsible adult attitudes; valuing some balance of playfulness, although sometimes too serious

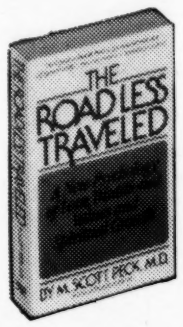
The Road Less Traveled

The best psychological (not pop psychology) guide to modern living I know of. The first 60 pages are practical descriptions of the types of discipline that are needed to face the problems of life. The remainder of the book deals with love, grace, and spiritual growth. It is simple enough to be used immediately and also deep enough to work on for a lifetime.

Frankly, I wasn't looking forward to learning about a spiritual life when I first chanced upon ***The Road Less Traveled*** *over seven years ago. My life then was in a shambles. I'd just gone through a divorce and felt like I was drifting. But I found that there was a spiritual component of me that needed to be integrated with the rest of my life.* ***The Road Less Traveled*** *has been that integration, and it has been steadily drawing me toward a less-traveled road ever since.* —*David Hawkins*

[Suggested by many]

The Road Less Traveled
M. Scott Peck, M.D.
1978; 316 pp.
$8.95
from:
Simon & Schuster, Inc.
Prentice-Hall
200 Old Tappan Road
Old Tappan, NJ 07675
or Whole Earth Access



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Falling in love is not an extension of one's limits or boundaries; it is a partial and temporary collapse of them. The extension of one's limits requires effort; falling in love is effortless. Lazy and undisciplined individuals are as likely to fall in love as energetic and dedicated ones. Once the precious moment of falling in love has passed and the boundaries have snapped back into place, the individual may be disillusioned, but is usually none the larger for the experience. When limits are extended or stretched, however, they tend to stay stretched. Real love is a permanently self-enlarging experience. Falling in love is not.

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We know very well why people become mentally ill. What we don't understand is why people survive the traumas of their lives as well as they do. We know exactly why certain people commit suicide. We don't know, within the ordinary concepts of causality, why certain others don't commit suicide. All we can say is that there is a force, the mechanics of which we do not fully understand, that seems to operate routinely in most people to protect and to foster their mental health even under the most adverse conditions.

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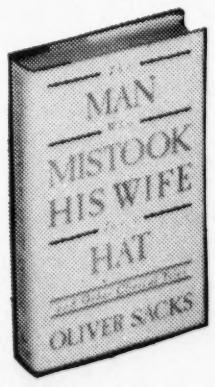
Whenever a patient says, "It's ridiculous, but this silly thought keeps coming to my mind — it doesn't make any sense, but you've told me I have to say these things," I know that we have hit pay dirt, that the patient has just received an extremely valuable message from the unconscious, a message that will significantly illuminate his or her situation.

The Man Who Mistook His Wife for a Hat

Oftentimes you can't learn how something works until part of it goes wrong. Neurologist Oliver Sacks has written a book of compassionate, true stories about people whose brains have short-circuited through disease, injury, or failure to develop. For every reader, one or two stories latch on to the heart and don't let go. Two gripped me: The horrible story of a woman athlete who suddenly lost all feeling of inhabiting her body, and the story of a man with no context, a sweet-natured man who cannot remember anything that happened to him during the last 35 years (including what happened a minute ago). This is an important book, I suspect, for anyone researching the brain —or designing such brain-oriented tools as computer software. It's as close as we'll get to a cutaway view of our neurological lives. —*Art Kleiner*

The Man Who Mistook His Wife for a Hat
Oliver Sacks
1985; 233 pp.
$15.95
($17.45 postpaid) from:
Simon & Schuster
Attn.: Mail Order
Prentice-Hall
200 Old Tappan Road
Old Tappan, NJ 07675
or Whole Earth Access



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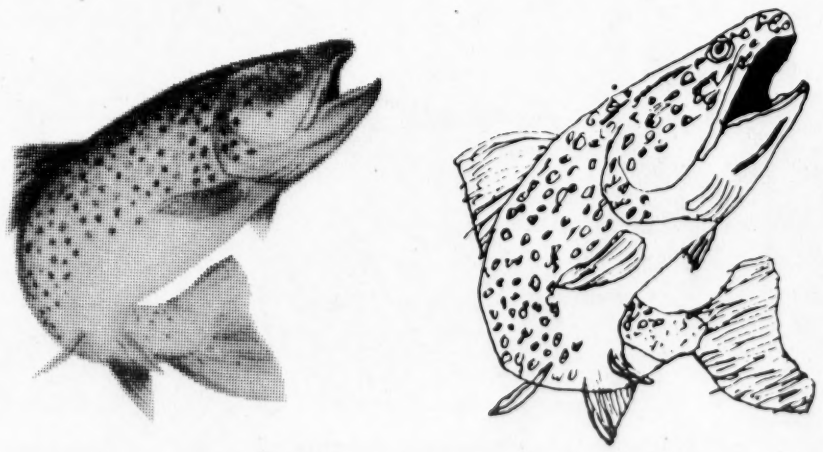
I showed him the cover, an unbroken expanse of Sahara dunes. 'What do you see here?' I asked.

'I see a river,' he said. 'And a litle guest-house with its terrace on the water. People are dining out on the terrace. I see coloured parasols here and there.' He was looking, if it was 'looking', right off the cover, into mid-air and confabulating non-existent features, as if the absence of features in the actual picture had driven him to imagine the river and the terrace and the coloured parasols.

I must have looked aghast, but he seemed to think he had done rather well. There was a hint of a smile on his face. He also appeared to have decided that the examination was over, and started to look round for his hat. He reached out his hand, and took hold of his wife's head, tried to lift it off, to put it on. He had apparently mistaken his wife for a hat! His wife looked as if she was used to such things.

I could make no sense of what had occurred, in terms of conventional neurology (or neuropsychology). In some ways he seemed perfectly preserved, and in others absolutely, incomprehensibly devastated. How could he, on the one hand, mistake his wife for a hat and, on the other, function, as apparently he still did, as a teacher at the Music School?



Drawn by an autistic man from the original in a sporting magazine.
The original had lacked character, had looked lifeless, two-dimensional, even stuffed. Jose's fish, by contrast, tilted and poised, was richly three-dimensional, far more like a real fish than the original.

JURY DUTY:

Would you serve or would you hide?

A teleconference initiated by Joe Troise on the WELL

illustrations by Phil Frank

Dave Hughes: We've got no problem like that in my home town of Colorado Springs, Colorado. When you are called you go or are held in contempt. No fooling around. When they recently ran out of jurors called by the normal process, the judicial staff went out on the street and literally subpoenaed people walking by (including a judge, who was excused to hold court). Jurors shouldn't get the idea they can get off by phony inconvenience. Just firmly require them to be there. Don't make them face the choice. Make it for them. They'll live. And if the system is truly based on a jury of one's peers, the busy people are the ones who need to serve. Chances are it is the busy people being tried.

Stewart Brand: I've served on one court martial — a kid accused of being a homosexual in the barracks. He was probably guilty, but none of us liked the law, so we said he was innocent and had the additional pleasure of ENRAGING the senior officers. It was a shitty law, and we took our part in changing it.

The jury I served on dealt with one of those litigious creeps who was trying to get big bucks for an accident he'd had on the Dumbarton Bridge. The jury handed him a fat nothing. The experience helped make a citizen out of me. I'd go again and encourage others to.

Richard Dalton: I was called once about two years ago. It involved heavy boredom while you were processed (bring a book, not a magazine). Then you had to watch a scritchy old film about "many are called but few serve" or something like that. After about four hours, my group of 60 or so was discharged as redundant to the case in question.

It turned out to be a murder and I wouldn't have made it through the lawyers anyway, since I am opposed to the death penalty. Yet the experience was a good one. I'd do it again (no search for excuses), as the option — having judges as the sole arbiters of right/wrong — doesn't appeal as a theory or practice. Go! It's educational as hell: positive and negative.

Mojo Jones: **I'm a fairly radical libertarian/anarchist, and I would be hard pressed to convict a defendant based on a law that conflicted with my convictions. I would assume that a sane district attorney would disqualify me from his jury when I expressed that fact. (At least in a drug or pornography or prostitution or something-like-that case.)**

On the other hand, as a juror I would assume that in most cases my decision is not the validity of the law, but whether or not the facts of the case are indeed covered by the applicable law. And my hands would be legally tied. It would wrench my gut to make such a decision.

LAST WEEK I was summoned to jury duty. My initial response was: "How do I get out of this?" But after watching all the well-dressed businessfolk rush to the excuse window, leaving only the elderly and the unemployed young, I got to thinking that I should stay. The entire principle of "a jury of one's peers" was flying out the window with the middle class wriggling out of the burden of serving on a jury panel. The case they were all called for demanded the expertise they probably had, but of 55 possible jurors, 39 got up and begged to be let off.

Am I making too much of this? Is jury duty really a "duty" or just a bunch of patriotic crap? Would you serve or are you too busy, legitimately, to give of your time? Is a day at your job more important than a few days in court? Why do you think so, or not think so?

Joe Troise: *I'm not entirely sure I know what they had in mind by the term "jury of one's peers." My first reaction is to interpret "peers" as people almost like me in some sort of socioeconomic terms. A dentist in trendy Tiburon is not my peer, at least to me, nor is a truck driver from South City. So geographic selectivity may make sense after all. I suppose it's too much to ask that I be judged by writers living on houseboats, but I wouldn't want the jury too far removed from my way of life. The thought of being judged by a board of realtors is quite disconcerting. But that's democracy, I guess. Perhaps a jury of ordinary citizens might not always give the most enlightened verdict; but it is interesting to note that rarely is a jury's verdict, no matter how stupid, ever regarded as corrupt.*

Tom Hargadon: Only time I was called I got off. Not because I was a lawyer (several others were selected), but because I have owned bars. The prosecution thought sure that I would acquit the guy. Seemed awful guilty to me. He got off — hung jury — with the public defender lawyer asking for conviction and the Mormon lawyer who did not drink asking for acquittal.

Can't tell from the outside, can you? ►

Rachel Holmen: *One year I was in the active jury pool in Berkeley. Their system was to call you roughly every two months for a year. I was never selected. Yet I actually sat through the entire trial that I was first called for (a domestic violence case), because I wanted to see what the decision process in full trial would be like. The whole trial only took an afternoon. The evidence was messy and I forget what the decision was. But even a dumb trial was educational. The interesting part for me was learning that the legal definition of BATTERY was touching someone without their permission.*

Judith Lucero Turchin: The thought of being tried by a jury of my peers in San Francisco (or any large city with a pool of inner city folks) terrifies me. When I served, one of my fellow jurors was so ignorant of the laws of evidence that he freely admitted to the court that he expected the defendant to prove his innocence. His reasoning? "He must have done something wrong, or the police wouldn't have arrested him . . . ." As to what goes on during deliberations — wait til you realize you're stuck in a room with 11 idiots — and then realize that each of them is certain that they alone are right and that *they* are stuck in a room with 11 idiots. Yet, if I'm called again, I'll do my best to serve again. Go figure.

Donna Hall: *Chief Justice Burger has suggested that some legal cases might just be too complex for the poor lay-person. He suggests that in some cases the jury system ought to be replaced by — you guessed it — judges and lawyers. I have always thought juries added an element of common sense and humanity to trials. I think that justice, whatever that word implies, is more viable in the hands of juries than it is in the hands of strictly professional interests. [Donna is a lawyer.]*

Timothy Brace: I have been on jury duty once. I have several criticisms of the system, number one being that it is like the draft — involuntary servitude — and therefore, immoral to me. They pay virtually nothing and this is very hurtful to those who can't afford it or who have no employer willing to make up the difference. They also treat the jurors like shit and make them wait around with no idea of what's going on. I think many people would love to serve if 1) they were paid decently, and 2) provisions were made so that one could be on call, instead of waiting for hours.

Lee Felsenstein: I was the foreman on a jury trial in Berkeley. The defendant was a nut who had been nabbed by BART transit police for walking out the emergency exit gate (enabling re-use of his valid ticket). So he offered to pay. They hung tough so he demanded a jury trial over 30 cents (BART had demanded his arrest). The prosecution witness made a fool of himself by attempting guilt by association — when asked if the defendant had tried to re-use his open ticket he said "most of them do that."

We started out in the jury room heeding the caution against rushing to judgment — my first impulse was to say, "he's a nut — he's guilty." But we quickly got down to a very serious discussion of the facts. We asked for re-instruction on the charges — fraudulently evading or attempting to evade payment — went back and hashed the matter over some more. After a total of about 90 minutes of deliberation we achieved a decision — not guilty, because BART had been holding onto his money all along and because he had made no attempt to re-use the ticket.

At the last moment one gent in the jury asked, "What was this all about," apparently feeling ripped off. I have thought about that, and I think I know. I have never been prouder to be an American as at that time (and I'm a fire-breathing anarchist/engineer radical). We twelve ordinary citizens saved civilization in there — in a small but important way. We renewed our bond to the vision of justice by DOING IT. We were conscientious when "practical considerations" told us to throw the nut to the wolves. We looked at the defendant and saw the lowest of the low — WHO WAS STILL ENTITLED TO JUSTICE. And the only place justice would come from was us. We knew deep within ourselves that we could be the next to be seeking justice, and we knew that we could expect only as good a jury as we would be. After we had been dismissed I walked over to the defendant and tapped him on the shoulder. "Make sure you get your change," I said, "You got thirty cents coming to you." (His ticket had been purchased for sixty cents.)

I would go out of my way to sit on another jury now, though I haven't been called since. Re-thinking it, I'm just bursting with pride about that group. And we were just ordinary people. Take that, Warren Burger! ■

Harry Goodman: **Asking how much jurors should be paid is like asking how much you should be paid to help ensure your own rights. There's much to be said for viewing jury duty as citizen right as well as responsibility.**

Phil Frank

MEDIATION

A BETTER WAY TO END DISPUTES

by Jake Warner

illustrations by Linda Allison

THESE DAYS SENSIBLE PEOPLE try to avoid our formal court system as they might avoid a rabid skunk, and for the most part, they are right. Taking a dispute to court (small claims court excepted) normally involves a major expenditure of money, a lot of time, at least as much anxiety, and, in the end, usually disappointment.

Indeed, the hopelessness of resolving any dispute through civil litigation has spawned a considerable industry dedicated to solving disputes in other ways. Called Alternative Dispute Resolution (or ADR), this movement advocates the private resolution of disputes. One of ADR's principal techniques is mediation (arbitration is another) in which the disputing parties arrive at their own solution with the help of a mediator who has no power to impose a decision but who plays a considerable role in helping the parties do so.

Today there are over 200 community-based groups formed to mediate disputes (for a list, contact the National Association for Community Justice — 149 Ninth Street, San Francisco, CA 94103). Some deal with landlord-tenant disputes, others with domestic problems, and many, such as the truly creative Community Board Program in San Francisco, focus on the sorts of corrosive neighborhood disputes that have never been handled by the formal court system because there was no profit in doing so.

Mediation's popularity has grown quickly in the last decade, not only because it is quicker and cheaper than going to court, but because for many types of disputes, especially domestic ones, it also produces better solutions. This is because courts are peculiarly ill-equipped to deal with the emotional freight that accompanies the legal issues in most domestic disputes. For example, when it comes to arguments over child custody and visitation (conflicts where the emotional issues routinely dwarf the legal ones), the court often ignores how people feel in its attempt to impose a legally correct solution. This, of course, misses the point so egregiously that although the principal legal correctness is well served, the parties themselves are typically left angry and bitter, not to mention broke.

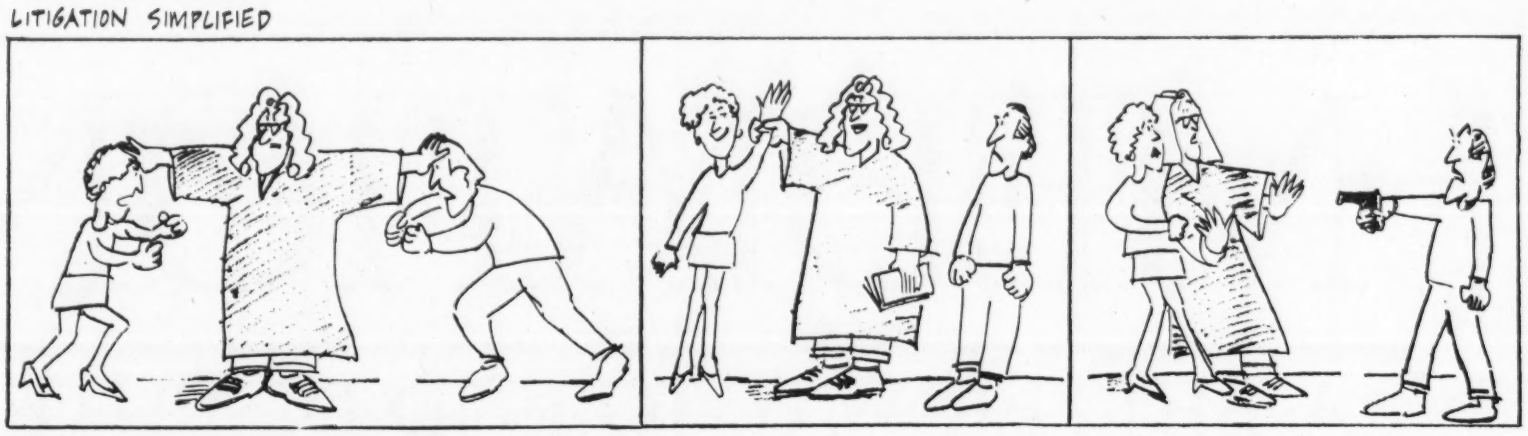
A good mediator, on the other hand, approaches a domestic dispute much differently, often patiently listening to hours of angry recriminations, emotional outbursts, and assorted ill feeling (none of which would be admissible in court), as an essential first step to helping the disputants focus on fashioning a joint solution. If it turns out that the parties agree to joint custody only if the assets of a jointly owned business are divided 60-40 (instead of the 50-50 that a court might be legally bound to impose under the circumstances), and one spouse agrees to always say ten "Hail Marys" before putting the kids to bed, so be it.

Mediation not only offers disputants a chance to try to resolve their disputes by sitting down with a person skilled in encouraging and directing dialaogue, it also increases the odds that once the dispute is settled, the disputants will still be on speaking terms. This is because if the mediation of a particular dispute is to succeed, both parties must necessarily agree that their most important concerns have been dealt with. In other words, the disputants almost always complete a successful mediation in a win-win posture — rather than the win-lose one of a contested court case — and the result often serves as a springboard for good future dealings.

The adversary system encourages people to overstate their claims and often results in bitter lying contests. Once people have testified in open court about how horrible the other party is, not to mention having experienced the paranoia and expense of a full-scale trial, there is little likelihood they will ever again have a constructive relationship. Thus, in many domestic, small business, and neighbor law disputes, even the winner ends up losing. ►

Legal self-help books were somewhat sleazy before Jake Warner launched Nolo Press (950 Parker Street, Berkeley, CA 94710). He transformed these semi-useless items into top-notch, indispensable tools that might save face or money. As he describes here, mediation is another step in minimizing use of lawyers.

—Kevin Kelly



Mediation doesn't always work because, after all, it relies on the parties to compromise their own dispute. What if they don't? Unlike a court or arbitration process, there is no authority figure to impose a decision. If the parties can't agree, they have to start over with another type of dispute resolution, usually either arbitration (a simplified and quick procedure when compared to court, but still based on the adversary model) or a formal court action. Still, the parties haven't lost anything, except small amounts of time and money, by trying mediation.

I'm an advocate of using mediation to solve many types of disputes. I routinely include a mediation clause in the contracts I write as part of my business, Nolo Press. The reason is simple. Aside from the fact that I can't afford the time and expense of going to court, I usually don't want to jeopardize long-term relationships with people I work with over one, or even a series of, disputes. And even when I think a particular person is such an unreconstructible idiot that I will never again risk a close relationship with him, I have been in the book business long enough to know that it's sufficiently incestuous that I will inevitably cross this person's path again. In other words, it is in my selfish interest to be open about participating in a mediation session if for no other reason than to diffuse the wrath of a potential enemy.

Besides small business and domestic disputes, mediation is generally very useful when three factors come together. The first, as discussed, is the need of the disputants to continue to relate to one another; the second is the desirability of keeping the dispute private; and the third is when the parties to the dispute are relatively equal in terms of power and sophistication. For example, many neighbor arguments over such things as decrepit fences, overgrown trees and wayward pets and kids meet all three of these tests and are naturals for mediation.

Mediation, for all its virtues, is simply not appropriate to handle David vs. Goliath disputes. This is true whether the power imbalance occurs in a domestic situation (one divorcing spouse is a lawyer and the other a Balinese dancer and recent immigrant), a business dispute or the sort of consumer problem inherent in a dispute with a large drug company over the side effects produced by one of their products.

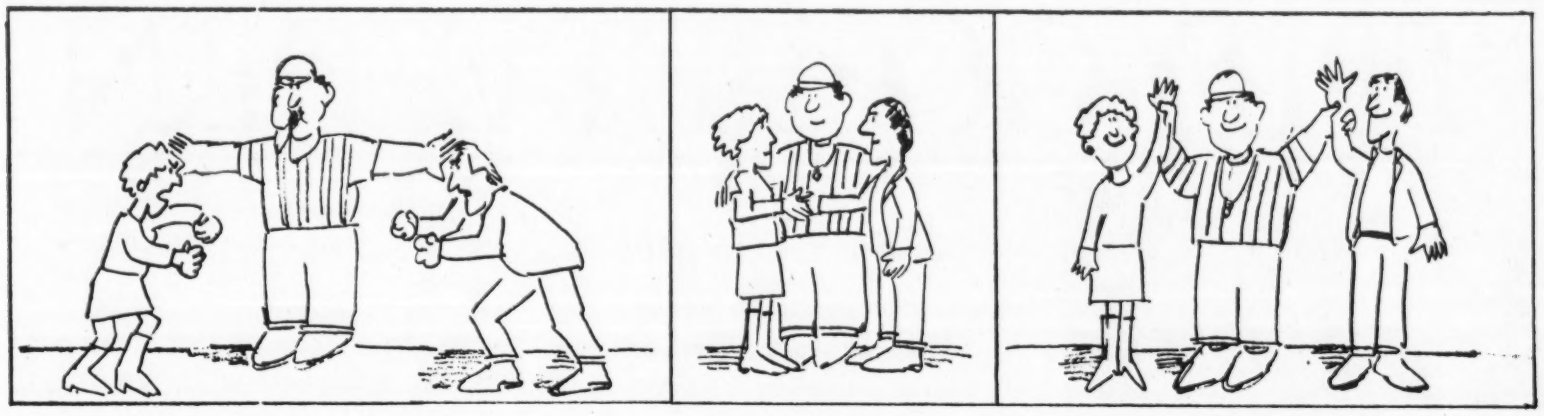
Okay, suppose you have a problem, or think you might in the future — how do you set up a mediation session? It's obviously crucial that you locate a mediator both parties have confidence in. I have found that in small business disputes, this isn't usually difficult; the disputants are usually acquainted with a broad cross-section of knowledgeable people who have some mediation experience and who will take on the job at a reasonable fee to be divided by the parties. I should note that, in my experience, while mediation experience is very valuable, it's usually at least as important that the mediator be knowledgeable about the particular field. Thus, if a software designer and publisher are arguing about the error checking ability of a particular program, it will help greatly if the mediator knows something about how the software business works as well as having skills in helping people resolve disputes.

When it comes to domestic disputes, it's obviously crucial to find a mediator who both parties feel is unbiased. Part of the problem here is that the disputants are commonly so angry at each other that they find it hard to agree on anything. Finding a good mediator is also complicated by the fact that many of the mediation services listed in the yellow pages and other business and service directories are not trustworthy. Often these people are simply lawyers with little or no mediation training who aggressively handle contested divorce trials in the morning and pretend to be sensitive mediators in the afternoon. Sooner or later the basic law school training of these people will seep out and they will try to impose a decision on the parties. However, I have found that lawyers who have undergone the rigorous training sessions offered by the Center for Mediation in Law, headquartered in Mill Valley, California, are usually an exception to this general rule.

Unfortunately, there is also a risk in turning domestic mediation over to psychologists and other nonlawyer mediators. While normally very helpful when it comes to disputes around child custody and visitation, many of these people do not know enough law to flag situations in which an unsophisticated spouse is willing to give up fundamental rights without sufficient knowledge of what these rights really are.

Probably the best way to find a genuinely good mediator is to talk to people working in the field and then to get and carefully check references. A nonprofit, community-based mediation group in your area is probably a good place to get a referral, even if they don't handle the type of problem you are concerned with.

A word of caution: A few years ago, the ADR movement generally, and those advocating mediation in particular, was dominated by idealistic reformers, people who correctly saw



the adversary court system as creating more disputes than it solved and charging outrageously for the privilege. These pioneers genuinely wanted to substitute a more humane and honest approach to conflict resolution to help disputants arrive at their own compromise rather than to rely on an authority figure such as a judge to impose a solution. By 1980, over fifty community-based mediation and conciliation groups were operating in communities in the U.S. In addition, a plethora of individuals and small groups was working in the domestic relations area. Almost all the community-based and domestic relations mediation programs are run on a shoestring by dedicated people, many of whom quite sensibly have a strong (sometimes almost religious) conviction that in community and domestic disputes, consensual, conciliatory techniques are a major improvement over the adversarial posturing of lawyers in the courtroom.

But the idealistic roots of the Alternative Dispute Resolution movement are currently being challenged. For better or worse (and it's not yet completely clear which), the ADR field is fast changing from being a sacred cow for legal reformers to a cash cow for a whole new group of legal entrepreneurs (hustlers is a better name for some of them). In dozens of communities, lawyers and business people are entering what amounts to the private court business. From personal injury litigation to disputes with health clubs, from contested divorces to major corporate litigation, these private for-profit groups, with names like "Arbitration Services" and "EnDispute," sell ADR services as if they were a commodity. Not surprisingly, many of these for-profit ADR corporations are run by lawyers.

While it's too early to say that turning alternative dispute resolution over to people whose main line is the bottom line will be fatal to the movement, warning flags are definitely flying. One reason for this is the alacrity with which the new ADR entrepreneurs are climbing into bed with large corporations which are frequently sued, such as insurance companies and manufacturers of consumer goods. These corporations view mediation as a way to escape million-dollar jury awards in personal injury and product liability cases. It galls me to hear these big business interests, which regularly tout aggressiveness as an effective business technique, suddenly espousing the consensual virtues of mediation and arbitration as a better and cheaper way to resolve disputes.

At the very least, the marriage of ADR and the American business establishment causes one to ask from whose pocket the big savings will come. According to the ADR capitalists, savings result from the fact that ADR techniques vastly reduce attorney fees and court expenses. This makes a certain amount of sense; after all, studies have shown that in some types of litigation such as asbestos cases, up to 70 percent of all settlements have ended up in the pockets of lawyers. However, many people, including Ralph Nader and anthropologist Laura Nader, who has written widely about the ADR field, challenge these assertions. They argue that the prime reason business interests are climbing on the ADR bandwagon is that less money will be transferred from corporate pockets to injured consumers who have given up their right to sue in a regular court in exchange for an inadequate alternative. Or, as Laura Nader recently asked in a public television debate: Can a person who is severely injured when their car loses its wheels going 60 mph on the interstate really hope to get a meaningful settlement against the manufacturer in a relatively short, informal ADR setting? And even if the injured party's monetary needs are met, will society as a whole be well served by an essentially private proceeding? Doesn't society as a whole benefit from a public trial and a large headline-grabbing judgment when it comes to getting a car manufacturer to put the wheels on better?

I think that for all their genuine virtues, mediation and probably most other ADR techniques are not well-suited to handling disputes between consumers and powerful business interests. The danger is that ADR may soon be unfairly discredited if it is oversold as a solution to the current tort law crisis. I would hate to see this happen because for many other disputes, mediation really is a wonderfully effective problem-solving technique, especially when compared to the alternative of hiring a lawyer with a fast mouth, a taste for BMWs, and a belief that aggressive presentation in court is a good way to resolve a problem. ■

27 GATE FIVE ROAD SAUSALITO CA 94965

THE GO-BETWEEN

by Gary J. Friedman

photos by Teresa Kennett

Community Boards of San Francisco explains the conciliation process to a neighbor.

During the conciliation, the disputing neighbors talk to each other directly, often for the first time, as volunteer panelists facilitate a resolution.

IT HAS BEEN A DECADE since I shifted my law practice from fighting for my clients as their advocate to acting as a neutral lawyer-mediator with two people who would otherwise hire advocates. When I started to work as a mediator, I was entering unknown territory, and so were my clients. It seemed to me that the adversary system functioned so poorly that anyone who tried mediation had to be better off. The expense of litigation was prohibitive for almost all but the well-to-do. Escalation of a dispute seemed to be an inevitable result of the attack, defense, and counterattack which characterize the typical dispute in the hands of lawyers. And probably most significantly, once lawyers became involved, the case moved out of the control of the clients and into the hands of lawyers or a judge, contrary to the theme of the seventies — assuming more power over our lives.

Mediation offered the possibility that while one person wouldn't be in complete control, together the conflicting people could control the outcome of the dispute. It also offered the possibility that the relationship between the parties wouldn't deteriorate as a result of the process. And the costs of resolving the dispute might be minimized by hiring one lawyer to sit with both people rather than pitting one lawyer against another.

Most of my efforts in the process are to help each person identify and articulate his or her own needs and sense of fairness in the situation.

In partnership dissolution, divorce, or other situations where relationships sink into the kind of trouble that calls for legal action, the agony and pain are reduced because the people who put the relationship together are in the best position to decide how to take it apart.

Ten years later I can look back and say that mediation has worked for many people. They have managed to cut legal fees, and have found nonpunitive solutions that helped each of them move ahead with their lives. Many learned how to talk to each other in the face of serious differences between them.

Yet for me and for most people who have mediated, the process of mediation is harder than any of us might have imagined beforehand. The relief that came from not being tied to court schedules or vitriolic contact with other lawyers and judges was balanced by the discovery that conflict in court was far less chaotic and less real than conflict in an informal setting without the protection of court rules of procedure or people interposing themselves on representatives between the two contestants. Conflict in mediation is often strong, direct, immediate, and emotional.

I have learned that in order to reach the goal of mediation — a lasting resolution fair to both sides — conflict is not only inevitable but usually indispensable. For many lawyers or others who like the idea of mediation as an alternative to the conflict they feel in the courtroom or in negotiation with other lawyers, it can be a surprise to find oneself sitting in the middle of a deteriorating relationship with each person going full blast at the other. Mediation isn't nice, and it's not just for nice people. As a matter of fact, the cases that I worry about most are where the people are so desirous of making peace with each other, or one person so much wants to preserve the relationship, that they are willing to sacrifice their needs to keep the peace. Then they have the worst of mediation. This result is far worse than would have been produced by lawyer representatives. It is clear that mediation doesn't work for people who are not willing to identify for themselves what they believe to be fair to both sides and stand up for themselves in the process. The people for whom it works best are those who each have a reason to want to work things out together, and who have the capacity and willingness to speak the truth as they know it, even in the face of someone else's different perception. ■

Volunteers are given 26 hours of training in communication and conciliation skills enabling them to become neighborhood peacemakers.

Mediation Quarterly

Paralegals, lawyers, mediators, and others interested in settling disputes without resorting to the adversary system of the courts will be interested in ***Mediation Quarterly****. Although it's academic in spots, most articles, which run the gamut from divorce mediation to how to negotiate business disputes to ethical considerations about the role of the mediator, are generally excellent.*

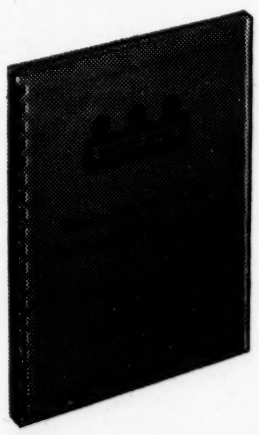
There are dozens of local newsletters popping up, but this one is the best. —*Jake Warner*

Mediation Quarterly
John Allen Lemmon, Editor
$25/yr.
(4 issues) from:
Jossey-Bass, Inc.
433 California Street
San Francisco, CA 94104

The Community Conflict Resolution Training Manual

There are hundreds of mediation groups in the U.S. Some specialize in a narrow type of dispute. Others are the quasi-official arms of juvenile or domestic relations courts. (California and several other states require court-sponsored mediation of all contested child custody lawsuits.) Perhaps the group with the broadest vision of the full range of disputes is the Community Board Program, founded and directed by Roy Shonholtz. Headquartered in San Francisco, this organization has helped start similar groups in two dozen other communities. They offer topnotch training sessions (run periodically at different locations around the country), designed for both community people and professionals. (For information call 415-552-1250.) These folks also publish a number of newsletters, manuals, and videotapes. —*Jake Warner*

The Community Conflict Resolution Training Manual
Judith Lynch, Editor
$25
from:
Community Board
Programs, Inc.
149 Ninth Street
San Francisco, CA 94103



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More Effective Listening Techniques

- Stop Talking: You can't listen while you are talking.
- Empathize: Try to put yourself in the other's place so you can understand what he is trying to communicate and why it matters to him.
- Ask Questions: When you don't understand, when you need more explanation, when you want to show that you are listening, ask. But don't ask questions to embarass or show up the speaker.
- Be Patient: Don't rush people; give them time to say what they have to say.
- Concentrate: Focus your attention on the words, ideas, and feelings related to the subject.

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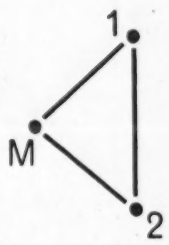
Considerable evidence exists that the seating arrangement has an impact on negotiations (Proshansky and others, 1970; Sommer, 1965). People who sit side by side tend to view the other party less adversarily than people who sit opposite each other (Sommer, 1965).



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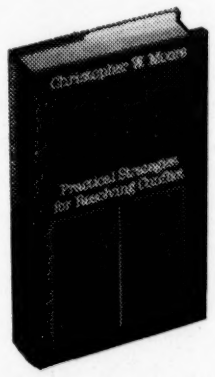
Mediation reaches voluntary settlements. Many mediation programs require entry into mediation to be voluntary. This in itself has an equalizing effect in that it signals to each party that neither alone has the power to bring about a settlement. The voluntary nature of mediation encourages the parties to adopt a cooperative frame of mind. On the one hand, no one can tell them how to settle; on the other, unless they find a mutually agreeable way of settling, they will have to resort to other forms of dispute resolution, which may be both less voluntary and less satisfactory.

The Mediation Process

This is the best and most accessible general text in the field. I particularly like it because there is relatively little material on the general wonders of mediation, but lots of specifics on how mediation sessions should be conducted. Although Moore probably overdoes it a bit when he divides a typical mediation into twelve stages (a half dozen would surely serve as well), I found it a real learning experience to follow him through each. —*Jake Warner*

The Mediation Process
Christopher W. Moore
1986; 348 pp.
$24.95postpaid from:
Jossey-Bass Publishers
433 California Street
San Francisco, CA 94104
or Whole Earth Access



Stage 7: Defining Issues and Setting an Agenda
- Identifying broad topic areas of concern to the parties
- Obtaining agreement on the issues to be discussed
- Determining the sequence for handling the issues

Stage 8: Uncovering Hidden Interests of the Disputing Parties
- Identifying the substantive, procedural, and psychological interests of the parties
- Educating the parties about each other's interests

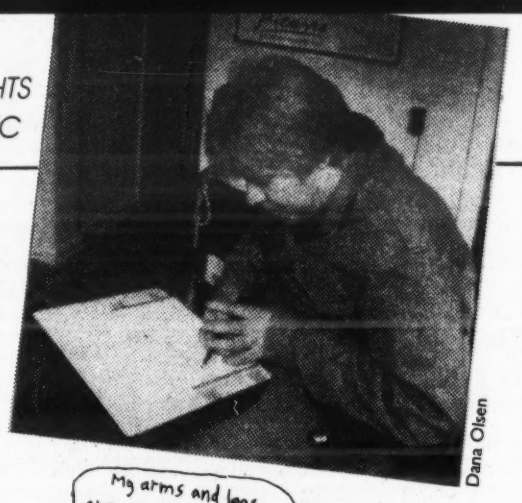
Stage 9: Generating Options for Settlement
- Developing an awareness among the parties of the need for options
- Lowering commitment to positions or sole alternatives
- Generating options using either positional or interest-based bargaining

Stage 10: Assessing Options for Settlement
- Reviewing the interests of the parties
- Assessing how interests can be met by available options
- Assessing the costs and benefits of selecting options

Stage 11: Final Bargaining
- Reaching agreement through either incremental convergence of positions, final leaps to package settlements, development of a consensual formula, or establishment of a procedural means to reach a substantive agreement

Stage 12: Achieving Formal Settlement
- Identifying procedural steps to operationalize the agreement
- Establishing an evaluation and monitoring procedure
- Formalizing the settlement and creating an enforcement and commitment mechanism

CARTOONIST **JOHN CALLAHAN** HIGHLIGHTS
SOME OF HIS EXPERIENCES AS A QUADRIPLEGIC

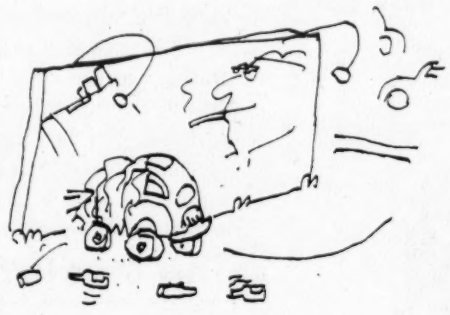


THE LIGHTER SIDE OF BEING

PARALYZED FOR LIFE

ONE EVENING IN 1972, A FRIEND AND I DECIDED TO GO OUT FOR AN EVENING OF FUN...

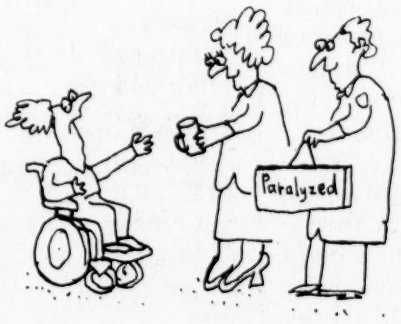
WE ENDED THE EVENING BY DRIVING HIS VOLKSWAGEN INTO A BILLBOARD AT 90 MILES AN HOUR. (LOOKING BACK ON IT, I KIND OF WISH WE HADN'T DONE THIS.)



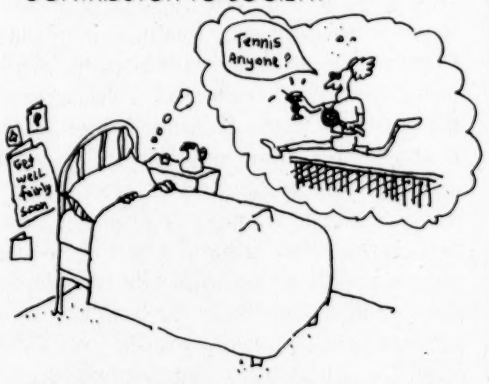
IN THE AMBULANCE, THE ATTENDANT ANSWERED ALL MY QUESTIONS...

IN THE INTENSIVE CARE UNIT TOO, THE DOCTOR WAS TACTFUL IN GIVING ME THE PROGNOSIS.

AT THE REHABILITATION CENTER, THERAPISTS SUPPLIED ME WITH THE LATEST IN ADAPTIVE EQUIPMENT.

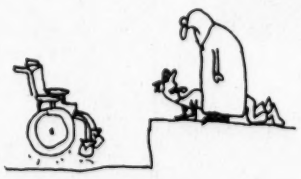


I EXPERIENCED THE TYPICAL DEPRESSION AND LONGED FOR THE DAYS BEFORE MY INJURY WHEN I WAS A USEFUL CONTRIBUTOR TO SOCIETY.



DURING REHABILITATION, I LEARNED MANY USEFUL THINGS, LIKE HOW TO MOVE FROM MY WHEELCHAIR INTO BED AND VICE VERSA...

ONE DAY, IN A MOMENT OF DESPERATION, I SNEAKED OUT AND WENT TO A FAITH HEALER...



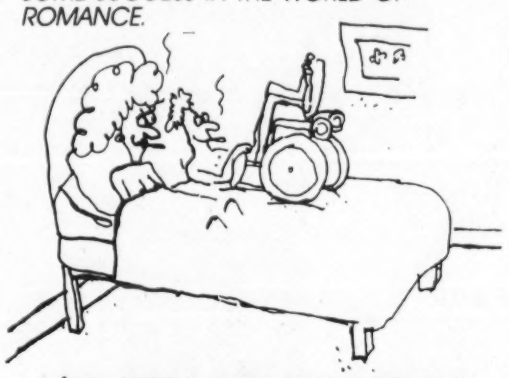
FINALLY, THE DAY CAME WHEN I WAS RELEASED FROM THE REHAB. CENTER, AND I WAS INTRODUCED TO THE HIGHLY-TRAINED ATTENDANT WITH WHOM I WOULD SHARE AN APARTMENT...

THE LIVE-IN ATTENDANT AND I SPENT MANY PRODUCTIVE HOURS TOGETHER IN OUR APARTMENT IN LOS ANGELES.

WE HAD SPECIAL EQUIPMENT INSTALLED, LIKE A DELUXE BATH LIFT.

AFTER A FEW MONTHS OF SLOWLY REBUILDING MY SELF-CONFIDENCE, I TENTATIVELY RESUMED MY SOCIAL LIFE...

...AND AFTER A WHILE BEGAN TO ACHIEVE SOME SUCCESS IN THE WORLD OF ROMANCE.

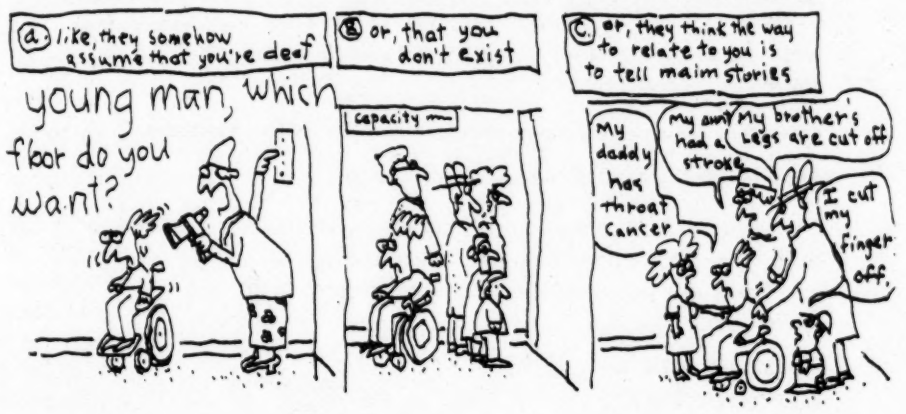


...AND AFTER A WHILE MY LIFE BECAME PRETTY NORMAL.

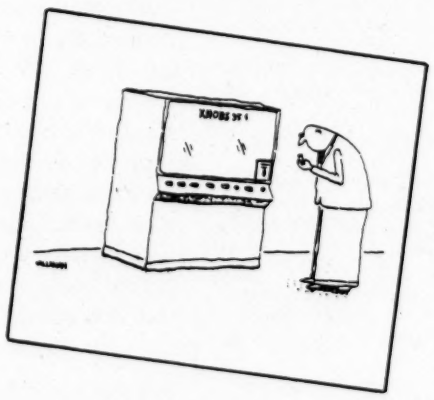
A COUPLE OF YEARS AGO I DECIDED TO GET SERIOUS ABOUT MY CARTOONING AND BEGAN SELLING THEM TO LOCAL AND THEN NATIONAL PUBLICATIONS.

I DEVELOPED SOME NEW TECHNIQUES FOR STARTING CONVERSATIONS..

OF COURSE, ONE OF THE PROBLEMS OF BEING IN A WHEELCHAIR ISN'T THE FACT THAT YOU'RE IN IT, BUT THAT PEOPLE REACT TO YOU IN THE WEIRDEST WAYS...



HERE ARE A FEW OF THEM.



OF COURSE, EVEN THOUGH I ENJOY BEING A CARTOONIST, MY LIFE ISN'T ALWAYS A BED OF ROSES

THESE DAYS I'M CONTENT TO ROAM THE STREETS OF PORTLAND LOOKING FOR NEW CARTOON IDEAS AND MEETING NEW PEOPLE. IF YOU SEE ME, SAY HELLO, AND IF YOU'D LIKE, OFFER A FEW CRITICAL COMMENTS ABOUT MY WORK...

THE PSYCHIATRIST HELPED ME TO SEE THAT BEING IN A WHEELCHAIR ISN'T SO BAD — THERE ARE EVEN CERTAIN ADVANTAGES...

John Callahan is represented by Acme Features Syndicate: P. O. Box 36E64, Los Angeles, CA 90036.

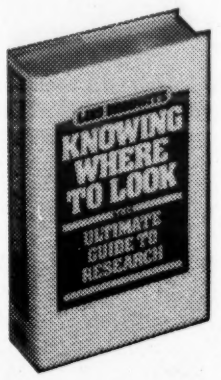
Knowing Where to Look

Information is everywhere — in public libraries, universities, government organizations, the memories of experts, historical societies, museums, computer databases, churches, etc., etc. The problem is knowing how to access the specific information you need. That's called research, and here's a well-organized manual for conducting all kinds of information searches, written by Lois Horowitz, a University of California/San Diego, reference librarian and newspaper columnist. She points us wisely to a wide range of reference tools, well-known and obscure directories, indexes, bibliographies, microform subject sets, and registers. And she introduces research strategies.

Dry and boring? Nope, because the pointers are illustrated with scores of fun examples for the author's newspaper column, "The Reference Librarian," helping plain folks with research problems about everything from movie stars to missing persons to UFOs. —*Ted Schultz*

This is the book to use after ***Finding Facts Fast*** *(**NWEC** p. 496).* —*Art Kleiner*

Knowing Where to Look
(The Ultimate Guide to Research)
Lois Horowitz
1984; 440 pp.
$16.95
($18.95 postpaid) from:
Writer's Digest Books
9933 Alliance Road
Cincinnati, OH 45242
or Whole Earth Access



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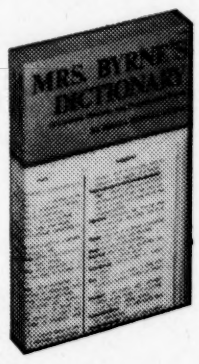
Let's say you're *not* an expert in criminology, but you want either to write a detective novel or to find out more about your legal rights. How can you learn the techniques of police interrogation, the tricks used in questioning to get the truth, the things a police officer can and cannot legally do, the procedure for a polygraph test, or the components of a written report? Spending time with a police department representative might be one way to find out. But what happens if you doubt the objectivity of his information? Must you visit the local police station for many weeks and take copious notes on police routines? That's another possibility — if you have weeks to spend.

You don't have to abandon your research, or, as a novelist, avoid certain episodes at the expense of realism. You might try textbooks. Check Subject Guide to Books in Print where you'll find an inventory of police officers' textbooks.

Mrs. Byrne's Dictionary

Odd, real words chosen from standard dictionaries. Some of them you'll wonder why they exist and some of them you'll wonder how you lived without. Superb bath and waiting room book. —*Anne Herbert*

Mrs. Byrne's Dictionary
Josefa Heifetz Byrne
1974; 242 pp.
$7.95
($9.45 postpaid) from:
The Citadel Press
120 Enterprise Avenue
Secaucus, NJ 07094
or Whole Earth Access



been caused by a tarantula bite.
tarassis (tər-ăs'ĭs) *n.* male hysteria.
tarbooshed (tŏr'bo͞osht) *adj.* wearing a *tarboosh*, or red felt Turkish hat.
tardigrade (tŏr'dĭ-grād) *adj.* slow-moving, sluggish.
tare (tĕr) *n.* 1. in weighing, the allowance made for the weight of the container. 2. the bitter vetch. 3. a counterweight. 4. soil clinging to sugar beets.
tarfu (tŏr'fo͞o) *adj.* Things Are *Really* Fucked-Up (army slang, for more of the same, see *snafu*).
tarn (tŏrn) *n.* a small mountain lake.
tarsiatura (tŏr"sĭ-ə-to͝or'ə) *n.* a kind of mosaic woodwork. also *tarsia.*
tartuffish (tŏr-to͝of'ĭsh) *adj.* pertaining to the pious hypocrisy of *Tartuffe*, the protagonist in Molière's play by the same name.
tath (tăth) *n.* cattle dung; grass growing near cattle dung. -*v.t.* to fertilize by pasturing cattle.
tathagatagarbha (tä-tŏ"gə-tä-gûr'bə) *n.* the eternal and absolute essence of all reality according to Buddhism.
tattogey (tăt'ə-jē) *n.* a user of loaded dice (British slang).
tauromachian (tôr-ō-mă'kĭ-ən) *adj.* pertaining to bullfights. -*n.* a bullfighter.
tautegorical (tôt-ə-gôr'ĭ-kəl) *adj.* saying the same thing with different words. opposite of *allegorical.*
tautoousious (tôt-ō-ou'sĭ-əs) *adj.* being absolutely the same.
taxonomy (tăks-ŏn'ə-mē) *n.* the science of classification.
technophobia (tĕk-nō-fō'bĭ-ə) *n.* fear or dislike of arts and crafts.
tecnogonia (tĕk-nō-gō'nĭ-ə) *n.* childbearing.
tectiform (tĕk'tĭ-fôrm) *adj.* roof-like; used as a cover. -*n.* tent-shaped designs on paleolithic cave walls.
ted (tĕd) *v.t.* 1. to put a serrated edge on. 2. to spread for drying. 3. to spread out, scatter, or to waste (figuratively).
tedesco (tĕd-ĕs'kō) *adj.* Germanic, especially German influence on Italian art.
teetertail (tē'tər-tāl) *n.* the spotted sandpiper.
teetotum (tē-tō'təm) *n.* 1. a toplike toy. 2. a small thing or person. 3. something that spins like a top. -*v.i.* to spin like a top.
teknonymy (tĕk-nŏn'ĭ-mē) *n.* naming the parent after the child.
tektite (tĕk'tīt) *n.* a greenish-brown glasslike stone thought to be meteoritic.
telamnesia (tĕl-ăm-nē'zə) *n.* poor memory for events long past.
telamon (tĕl'ə-mŏn) *n.* a male *caryatid* (which see).
telarian (tĕl-ĕr'ĭ-ən) *adj.* spinning a web. -*n.* a web-making spider.
telegenic (tĕl-ə-jĕn'ĭk) *adj.* suitable for televising.
telegnosis (tĕl-ĕg-nō'sĭs) *n.* alleged occult knowledge of distant events.
telekinesis (tĕl"ə-kĭn-ē'sĭs) *n.* in which objects seem to move by spiritualistic fiat.
teleology (tĕl-ē-ŏl'ə-jē) *n.* the "fact" of design in nature.
teleophobia (tĕl"ē-ō-fō'bĭ-ə) *n.* 1. fear of definite plans. 2. fear and dislike of religious ceremony.
telephanous (tĕl-ĕf'ən-əs) *adj.* visible afar.
telepheme (tĕl'ə-fēm) *n.* a telephone message.
telestich (tĕl-ĕs'tĭk) *n.* a poem in which the consecutive final letters of the lines spell a name.

No Sense of Place

The author modestly describes his book as an attempt to integrate some of McLuhan's ideas about the impact of new media with Erving Goffman's notion of social behavior as vernacular theater. In fact, both media and social behavior are different corners of one puzzle. Meyrowitz shows this by filling in the center. His work feels less original than theirs, but seems to offer a more secure base for social-scientific research. His stock liberal viewpoint of how news coverage interacts with recent political events weighs heavy after a while, but nearly every paragraph contains an apt phrase, new angle, example or insight that more than compensates. —*Robert Horvitz*

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Television today has a social function similar to the weather. No one takes responsibility for it, often it is bad, but nearly everyone pays attention to it and sees it as a basis of common experience and a source of topics of conversation.

•

In contrast to print, television does not allow control over what is "expressed" along with what is "communicated." Television news programs, for example, cannot escape presenting a wide range of personal expressions in addition to "objective facts." Rather than attempting to fight this aspect of television news, producers have taken the parts of the back region that are difficult to hide and thrust them into the show itself. This is especially true of local news programs. Backstage expressiveness, personal feelings, informal interaction, and ad-libbed jokes have become an important aspect of the performance. Similarly, many television quiz and talk shows have abandoned attempts to hide microphones, camera operators, "applause" signs, and cue cards.

Radio Renaissance

Transcripts of eight talks at the New School for Social Research (NY) in the Spring of 1982 by some of the most inventive radio producers and artists in the U.S. Very diverse ambitions and approaches; some cynical about the state of radio broadcasting; all trying to do something about it. Packed with ideas that make you want to go out and rearrange some magnetic particles.

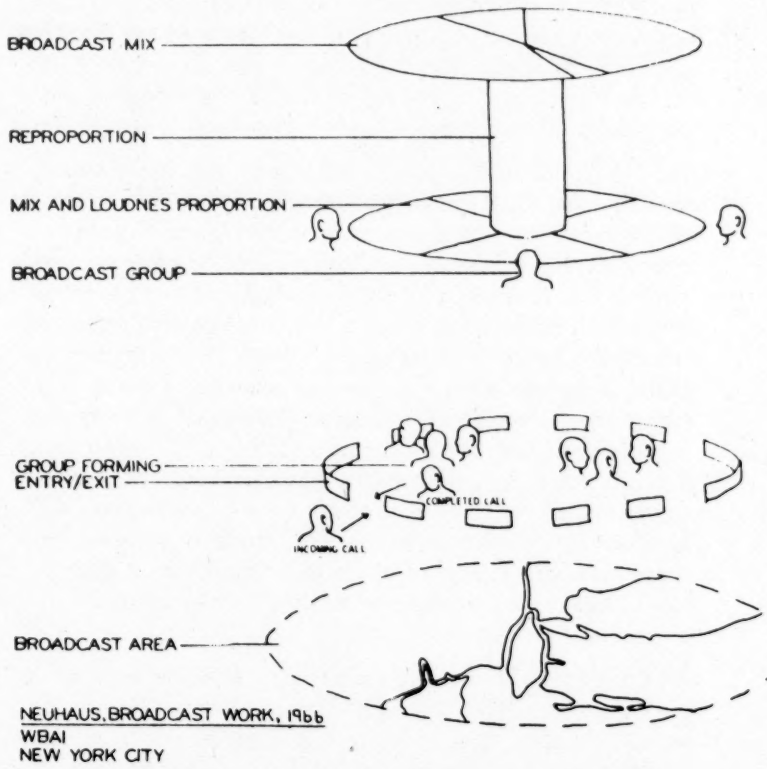
—Robert Horvitz

•

One of the things we're working on that I wanted to tell you about is radio drama strictlly for headphones using the Kunstkopf method of recording. Your ears hear sound all around, above you and below you. Kunstkopf means "arthead" in German, by the way. We're doing a horror series and the interesting thing about this method is that it's really the only medium where you sit right in it. Kunstkopf recording involves using a rubber head that has ears on it that are perfectly sculptured. There are holes in the ears and down where the eardrums would be there are microphones, inside this head. The Germans found that the way we hear sound, what determines the way we hear it differently than say stereo recording, is the shape of our ears and also the auditory canal. In Germany, by the way, radio program guides have a little headphone design meaning you should listen to the program with headphones. Oddly, National Public Radio has never, to my knowledge, done a series of this sort.

This piece was initiated by advertising a phone number and a time of broadcast. People entered the piece through a natural random selection process. There were many more callers than lines. A person whose call coincided with a momentary free line, entered into the piece. People could make any sounds they wished. I listened to the sounds of the callers and formed broadcast groups which were put on the air. In the broadcast, I reproportioned these groups according to what they were doing.

Radio Renaissance
(Producers and Artists of the '80s)
Louis Giansante, Editor
1983; 43 pp.
$5.00
from:
Media Studies Program
The New School
for Social Research
2 West 13th Street
New York, NY 10011
or Whole Earth Access



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The significance of electronic media may be that the planning and staging of "media events" cannot be hidden as simply as the planning for face-to-face encounters. A politician, for example, cannot hide his campaign strategists as easily as the average business executive can hide the suggestions of a spouse or hair stylist. Electronic media may be exposing the general "pseudoness" of events rather than creating it. Boorstin and others may be responding more to the newness of the *visibility* of staging than to the newness of staging itself. . . .

By thrusting the backstage area of life out into the public arena, electronic media have made it more difficult to play traditional formal roles. . . . As Richard Sennett describes in *The Fall of Public Man*, we have lost the sense of "distance" that once characterized much of social life. "The reigning belief today is that closeness between persons is a moral good."

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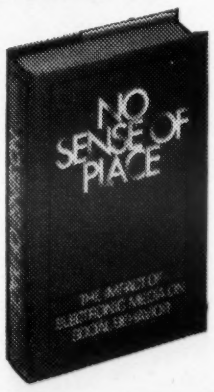
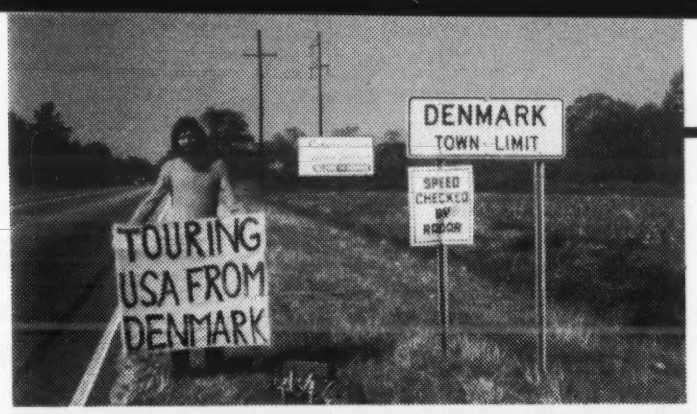
We cannot select uses for new media that advance old goals without often altering the social system out of which the goals developed. We cannot, for example, "buy the wife" a television set to ease her boredom with housework without changing her sense of place in the world. We cannot use television to "educate" our children without simultaneously altering the functions of reading and the structure of the family and the school. . . . We cannot have mediated intimacy with our political leaders, in the hope of getting closer to greatness, without losing a belief in heroes. And if we use media to teach many different groups about each other, we also change the lines of social association and the perimeters of group identities.

The assumption that the new media or the "lack of privacy" they foster will, in and of themselves, support authoritarian hierarchies is based on a misunderstanding of the relationship between privacy and hierarchy. For it is privacy and distance that support strong central authorities. Our notions of privacy have a very short history in Western civilization, and as we know from studies of hunting and gathering societies and of pre-print Western Europe, the virtual lack of privacy tends to weaken rather than support great distinctions in status. It is the person who tries to stand apart or above, not the average citizen, who is most damaged by the lack of privacy. We may be aesthetically uncomfortable with the thought of full and open access to information, but, all other things being equal, such access would tend to level hierarchies rather than erect them. Even the evidence we have been gathering recently about our leaders' "abuses of power" may, in this sense, testify more to our relatively increased ability to gather information on leaders than to an absolute increase in the abuse of power. The thing to fear is not the loss of privacy per se, but the *nonreciprocal* loss of privacy — that is, where we lose the ability to monitor those who monitor us.

No Sense of Place
Joshua Meyrowitz
1985; 416 pp.
$22.50 from:
Oxford University Press
16-00 Pollitt Drive
Fair Lawn, NJ 07410
or Whole Earth Access





American Pictures

The remarkable photographs and stories in this book reveal aspects of America that we Americans usually shun or deny. Danish visitor Jacob Holdt toured this country as a self-proclaimed vagabond for five years (1971-1976) on a budget that out-Thoreau'd Thoreau — $8 per year. He supported himself by selling his blood and living on the hospitality of the people he photographed.

His thousands of Kodachrome photographs show mainly people from what has come to be known as the underclass of this country — ghetto pimps, country poor, drunks, criminals and others of "that sort." Picture after picture carries you squirming to a very loving, but disturbing intimacy with his subjects. Even if the book were not a crucial document for understanding the economic contradictions of the U.S., and even if it were not a rare chance to learn about the "other half" as people instead of statistics, this would be a fascinating story of what happens when you take the world on with nothing but an attitude of complete openness. During his trip Holdt lived with more than 430 families. Nearly everything that happened to him — from a car ride with Teddy Kennedy to a flight from a shanty-town at gunpoint — was the result of following up a chance encounter.

An epilogue tells of Holdt's hard work figuring out how to publish his book without exploiting the people he cared about. He also produced a multimedia show that about a million people have seen so far. —*Art Kleiner*

[Suggested by Robert Horvitz]

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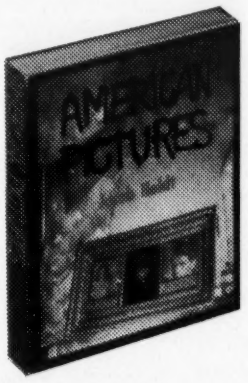
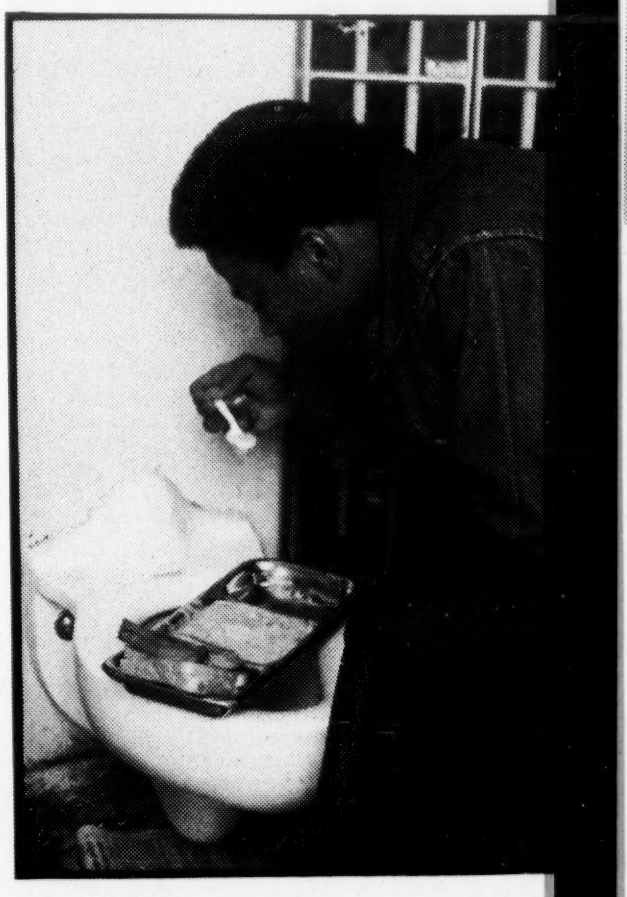
Four times I was attacked by robbers with guns (but managed in three cases to make good friends with them and be invited home, by pulling out my hidden beard; if you can make attackers laugh with you as equal human beings it is almost impossible for them to work themselves up again afterward to the position of executioners from which they can victimize you), twice I was attacked by men with knives, twice the police in fear pulled their guns on me, several times I was surrounded by angry blacks in dark alleys and only a hairbreadth from being killed, once I was ambushed by the Klan, several times bullets were whistling around me in street shoot-outs, as well as at Wounded Knee, twice I was arrested by the FBI.



American Pictures
Jacob Holdt
1985; 304 pp.
$14
($15 postpaid) from:
American Pictures Foundation
P. O. Box 2123
New York, NY 10009
or Whole Earth Access

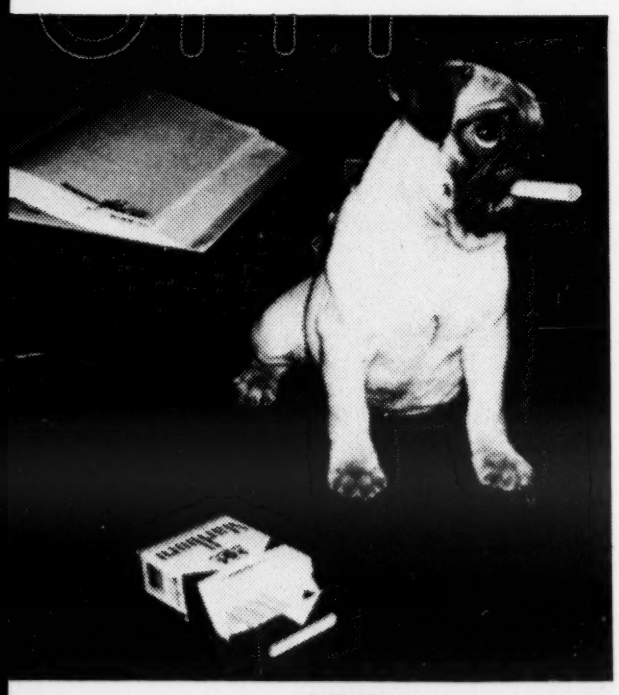


Popeye had himself been on a long journey. He was only 10 years old the first time he went to jail and had since spent more than 19 years in prison. . . When he saw the big holes in my shoes, he one day gave me a pair of boots without a word. Though I had stopped photographing, he persuaded me to smuggle the camera inside the prison and take these pictures for the prison paper.

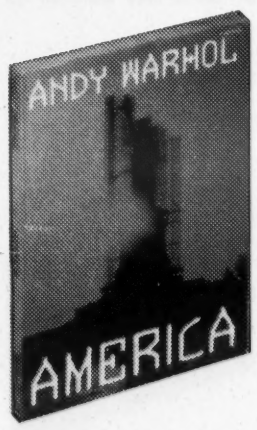
America

Sooner or later, deliberate non-trendies must come to terms with the fact that Andy Warhol is a savant — whether idiot or not, I don't presume to judge. ***America*** *is a collection of perceptively simple short essays about the ironies of the U.S.A. As if to illustrate its own ironies, the writing is sloshed into an overpriced book of Warhol's unimpressive photographs. I have never found a book so easy to pull excerpts from — time after time, I found myself nodding my head at Warhol's unique aphorisms.*

—*Art Kleiner*



America
Andy Warhol
1985; 224 pp.
$15.95
($16.43 postpaid) from:
Harper & Row, Publishers
2350 Virginia Ave.
Hagerstown, MD 21740
or Whole Earth Access



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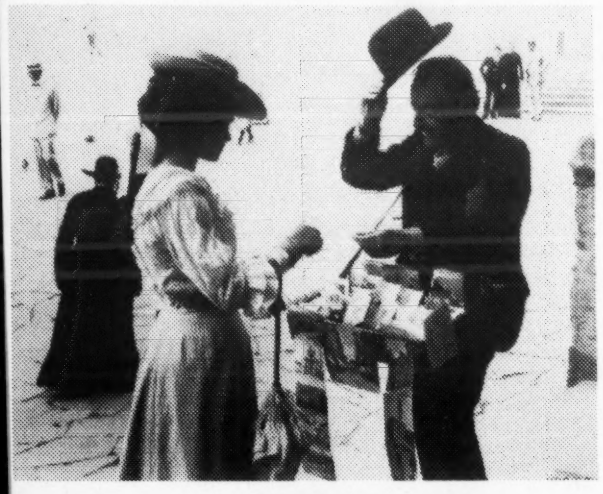
But some people have found a way to satisfy their TV dreams. They have pets, and having pets is just like having a television family. TV parents never have any real problems with their children, and owners don't have too much trouble with pets. Pets make a family that's always loyal, will do just about anything to make you happy, never criticize, love you till the end of the earth, and never expect much in return.

You can get a cat that calls to you every morning when you go out the door, just like a TV mother; a dog that always has that sad, cute face when you scold it, just like TV children; a pet that comes running to the door all excited just because you're coming home, like a TV wife; and one that sulks in the corner when it doesn't get its way, just like a TV husband or father.

Most of the time one pet can even do all these things. So even if you're sort of poor, but you have all these television hopes and dreams, pets are really the answer.

GOOD MOVIES

by Sheila Benson



ROOM WITH A VIEW

That moment in **ROOM WITH A VIEW** when you relax, knowing absolutely that you are in secure hands, comes with the hand-painted opening titles done in decorative Florentine style, as Kiri Te Kanawa's voice floats in the background in a blissful interpretation of Puccini's "O, mio babbino caro."

The story, set splendidly in Florence and in Surrey, centers around Lucy Honeychurch, a passionate but gently raised young Edwardian lady whose fire is expended at her piano, on Beethoven and Schubert. Lucy seems steadfastly to be choosing the wrong suitor for the wrong reason, and the untangling of this becomes a comment on families, temperaments, the period, and what is innately (and, in Forster's view, debilitatingly) British. Lucy is Helena Bonham Carter, a beautiful young aristocratic actress who attacks the role with a truly ferocious scowl and the stride of someone who begs to be released from corsets back into jeans. However, she is not uninteresting.

Room With A View's richness of insights, its warmth, its ravishing production and this impeccable cast makes it that rare event — a film that you see more than once, for the pure pleasure of it.

★ ★ ★

When you think of the indignities everyone — especially their target audience — has suffered in the name of teenage films, the steadfast joy of **LUCAS** seems all the more astonishing. How a story this engaging, this sweet got made, seemingly uncompromised and untampered with, is one of the wonders of Hollywood. You suspect autobiography in writer-director David Seltzer's nifty story of "accelerated" Lucas (the fine and endearing Corey Haim), 14 years old, too-bright, too-vulnerable, and feisty as all hell, whose yearning for a tawny-haired 16-year old (Kerri Green, also marvelous) brings about an act too horrendous to be given away here. The honesty of Seltzer's ensemble, Haim, Green, Charlie Sheen, Winona Ryder makes each of these kids ring utterly true — these are teenagers as they really are. Their curiosity, loyalty, brashness and shyness makes us want to have had them or to have been them. And how long has it been since any of us could leave a movie smiling in the reflected warmth and sweetness of its characters?

★ ★ ★

MY BEAUTIFUL LAUNDRETTE

I don't know about the national release pattern of Stephen Frear's **MY BEAUTIFUL LAUNDRETTE**, but don't let it get away if it's anywhere near you. Frears, who has done many films, most notably last year's sneaky surprise **The Hit**, made this one for British television. Its brashness, freshness and audacity, and the complexity of writer Hanif Kureishi's themes are only another depressing footnote to the state of American television today. London-born, 29-year-old Kureishi plunges us into a milieu he understands well, the second-generation Pakistani in London today, some newly-rich, some not, all crippled by the long shadow of Empire, no matter how tattered that shadow. What emerges is a contemporary satirical romance, deliciously acute, perfectly played by Daniel Day Lewis, looking very different than he did in **Room With A View**; you may not even spot him at first as a South London gay punk with black-and-blond hair. It's our introduction to what may be one of the major British actors of the decade.

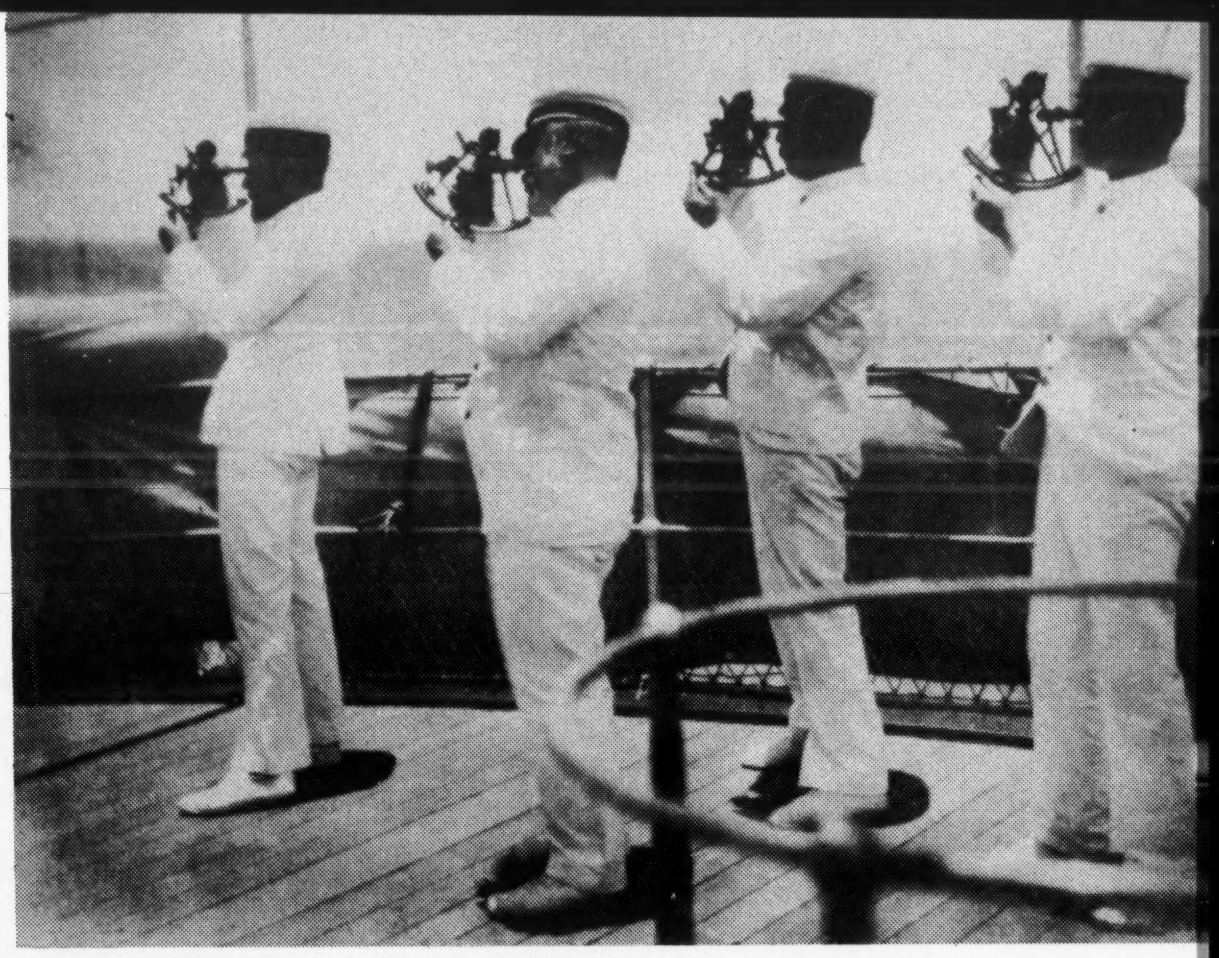
LUCAS

★ ★ ★

THE GIG is small and special, the work of writer-director Frank Gilroy (**The Subject Was Roses, From Noon Till Three**), who emerges every decade or so to drop one nicely realized film in our midst, then disappears back into the theater. This one is a lovely what-if: what if that six-man jazz combo who've been noodling around in each other's rec rooms for 20-some years were hired as real musicians? Marked by fine performances (by Wayne Rogers, Cleavon Little, among others) it's a gently funny meditation, actually, on dreams, professionalism and its unfunny demands, and on what life does or does not really require of us. ■

THE GIG

Navigating Computer Networks



by Art Kleiner

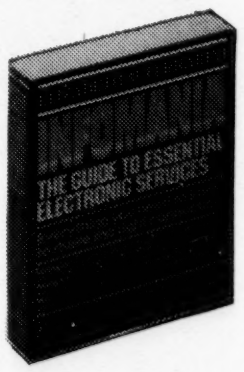
THE ERA IS GONE when all computer networkers shared one or two common meeting spaces — when, for all intents and purposes, everybody who typed in messages through a computer terminal felt like they knew everybody else. More than a dozen publicly available computer conferencing/communication systems now exist — each with its own unique membership, arcane language of commands, and burgeoning culture. Any of them will put you in touch — easily and cheaply — with different groups of people you could never reach otherwise.

CompuServe, for instance, has a disproportionate population of technical people and media professionals (including a surprising number of prominent television, science fiction, and comic book writers). In turn, The Source gathers more than its share of government managers, lawyers, and research scientists. Thus conversations on the two networks, even regarding the same topics, can have vastly different perspectives.

CompuServe and The Source represent just a small fraction of your computer-networking choices. There are Delphi and People/Link — two systems deliberately designed with many of the features of CompuServe and teenage hackers in mind. Plus GEnie and Viewtron, two new computer networks with large corporate sponsors (General Electric and Bell South, respectively). Plus BIX, operated by **Byte Magazine** and devoted mostly to computer and technical issues. Plus Unison, operated by a small, socially conscious firm in Denver, Colorado. Plus our own system, the WELL, which has recently achieved less expensive national access through a transmission system called UNINET. Plus the WELL's sister systems: Chariot in Colorado Springs, ArborNet in Ann Arbor, and The Commons in Boston. Plus thousands of local bulletin boards. And all of them change constantly — too constantly for a quarterly publication like ours to even cover, let alone review.

It's as if you were looking for a neighborhood to live in, in a city made of silly putty. What's an aspiring computer networker to do?

There are two good books. Alfred Glossbrenner's **Complete Guide to Personal Computer Communications** is still the best introduction to computer networks in general. (We reviewed it in the **Whole Earth Software Catalog** and in **CoEvolution Quarterly** (#37, p. 105). Elizabeth Ferrarini's **InfoMania** is a spectacularly complete snapshot-listing of the conferences and systems available when it was written (about a year ago).



Infomania
(The Guide to Essential Electronic Services)
Elizabeth M. Ferrarini
1985; 314 pp.
$14.95
($15.95 postpaid) from:
Houghton Mifflin Co.
Attn.: Mail Order Dept.
Wayside Road
Burlington, MA 01803
or Whole Earth Access

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You don't have to hire a translator to give your messages a foreign accent. Service Systems Technology's TINA International Message Service, an international electronic mail service, will do the translating for you. The service's language program can translate a message into or out of English, Spanish, French, German, and Italian, and you can choose the language you want to see commands in. The folks at Service Systems claim that it's cheaper to send an international message through TINA than via Telex.

Service Systems Technology, P. O. Box 10190, Marina del Rey, CA 90295; 213-827-1775. —*Infomania*

LinkUp Magazine is a new tabloid with personable writing that keeps track of new computer networks, information services, terminal software, and anything else you'd need to telecommunicate effectively via personal computer. Some articles pick a topic (investing, psychology, detective work, religion) and describe everything online that's related. Others cover new books, bulletin boards, and forums. Perhaps because its writers include such telecommunicating cognoscenti as Elizabeth Ferrarini and Brock Meeks, **LinkUp** manages to stay on top of the bewilderingly moveable feast of new on-line forums and bulletin boards. It is also beginning to cover some of the legal and social ramifications of the new telecom technology.

Link-Up
Bev Smith, Editor
$22/year
(12 issues) from:
Learned Information, Inc.
143 Old Marlton Pike
Medford, NJ 08055

But the best online guides are on computer networks themselves. These half-dozen conferences function as informal clearinghouses — the people who hang out there will tell you where to go to find a particular computer network community. Keep in mind that computer network managers don't run these forums. The startlingly fast word-of-mouth comes from dozens of amateurs, who are just as likely to recommend a Delphi conference while talking on CompuServe as they are likely to mention a GEnie conference on the WELL (and vice versa). Usually, they're paying connect time charges out of their own pocket for the time spent answering your question; be courteous and responsive. Here are the best places to look:

Unison's ENA Forum: Managed by the Electronic Networking Association, which is the closest thing that we anarchic computer networkers have to a representative body. The ENA is a loose federation of people who love, use, and promote computer networking. Between them they're familiar with nearly the entire vast multi-dimensional universe of computer conferences. They meet on Unison's PARTI system to plan common projects. If you post a query here, you'll most likely get the most comprehensive answers, covering the widest variety of systems.

"PARTI BOARD" on Source PARTI. Source PARTI is

► *In the access information to follow, "prime time" means prime hours: 8 a.m. to 6 p.m., Monday through Friday, except holidays. "Non-prime time" means all other times.*

Electronic Networking Association (ENA): memberships **$50/year** from ENA/Ed Yarrish, Treasurer, c/o Executive Technologies Associates Inc., 2744 Washington Street, Allentown, PA 18104.

Unison: Signup **$25**. 300/1200 baud. **$17.50**/hour (prime hours) or **$6** (non-prime). Mile High Media, Attn.: Fred Dudden, 3542 East 16th Avenue, Denver, CO 80206; 303/329-3113.

The Source: Signup **$49.95**. 300 baud: **$20.75**/hour (prime), **$7.75**/hour (non-prime). 1200 baud: **$25.75**/hour (prime), **$10.75**/hour (non-prime). Source Telecomputing Corporation, 1616 Anderson Road, McLean, VA 22102; 703/734-7500.

Delphi: Signup **$49.95**. 300/1200 baud use **$16**/hour (prime), **$6**/hour (non-prime). General Videotex Corporation, 3 Blackstone Street, Cambridge, MA 02139.

Electronic Information Exchange System (EIES): 300/1200 baud. **$75**/month plus **$3-$9.50**/hour, depending on time of day and transmission network. Computerized Conferencing and Communication Center, New Jersey Institute of Technology, 323 King Boulevard, Newark, NJ 07102.

Whole Earth 'Lectronic Link (The WELL): 300/1200/2400 baud. **$8**/month plus **$3**/hour (prime hours; non-prime-hour charges depend on transmission network). The WELL, 27 Gate Five Road, Sausalito, CA 94965.

CompuServe: Signup **$39.95**. 300 baud: **$12.50**/hour (prime), **$6**/hour (non-prime). 1200 baud: **$15**/hour (prime), **$12.50**/hour (non-prime). CompuServe Information Service, 5000 Arlington Centre Boulevard, Columbus, OH 43220.

SEARCH DIARY

[From the Whole Earth Forum on CompuServe]

Ed Hunt (10/23/85): Does anyone know of an online source of AIDS information? I know about CAIN on DELPHI but DELPHI is a little out of my budget range. I'm also aware of Healthnet, but the information there seemed way out of date and so general as to be useless.

Susan Katz (10/25/85): Ed, check CompuServe's JFORUM (Journalism Forum) — one of the folks there has uploaded some file(s) which may be of interest to you. [The files contain conversations about the ethics of a case where WCCO-TV followed a transient with AIDS around the country, paying for his stays in flophouses, then notifying local authorities the AIDS victim was having sex in the community, and filming the local reaction. —AK]

Ed Hunt (10/27/85): Susan, thanks. I guess I'm looking for an AIDS Forum. There is a lot of information in a lot of different places but so far no one collecting it all in one place.

Susan Katz (10/29/85): Ed, since you live in Durham, have you checked into the Humanities Forum there? Used to be a BBS from Winston-Salem and the sysop moved to Durham this past summer. His prime interest is medical ethics, and last time I logged on, there was an AIDS thread. If you need their phone number, let me know & I'll look it up for you.

Art Kleiner (10/26/85): Ed, try the Source PARTI. When you get there, Read "Chronicle." There's a bit of stuff on the WELL if you live near the SF Bay Area.

Ed Hunt (10/27/85): Art, unfortunately, I'm 3000 miles and grid knows how many LATAs from the SF Bay Area. I'm not a SOURCE subscriber either, but I might sign up. There's a lot of information out there, but short of using a nationwide clipping service, no way to keep on top of it. For example, there's an interesting (in the Chinese sense) rumor that there has been discussion in some locales of mandatory blood testing for teachers. True? I have no idea, but I would like to have a Forum where there would be a good chance of finding the facts.

Steven Stern (10/27/85): You can get a clipping service on CompuServe if you sign up for the executive service option. Try Go ENS. You can set up an ongoing search of any of Associated Press's various newswires, then edit and transfer the results to a DL here.

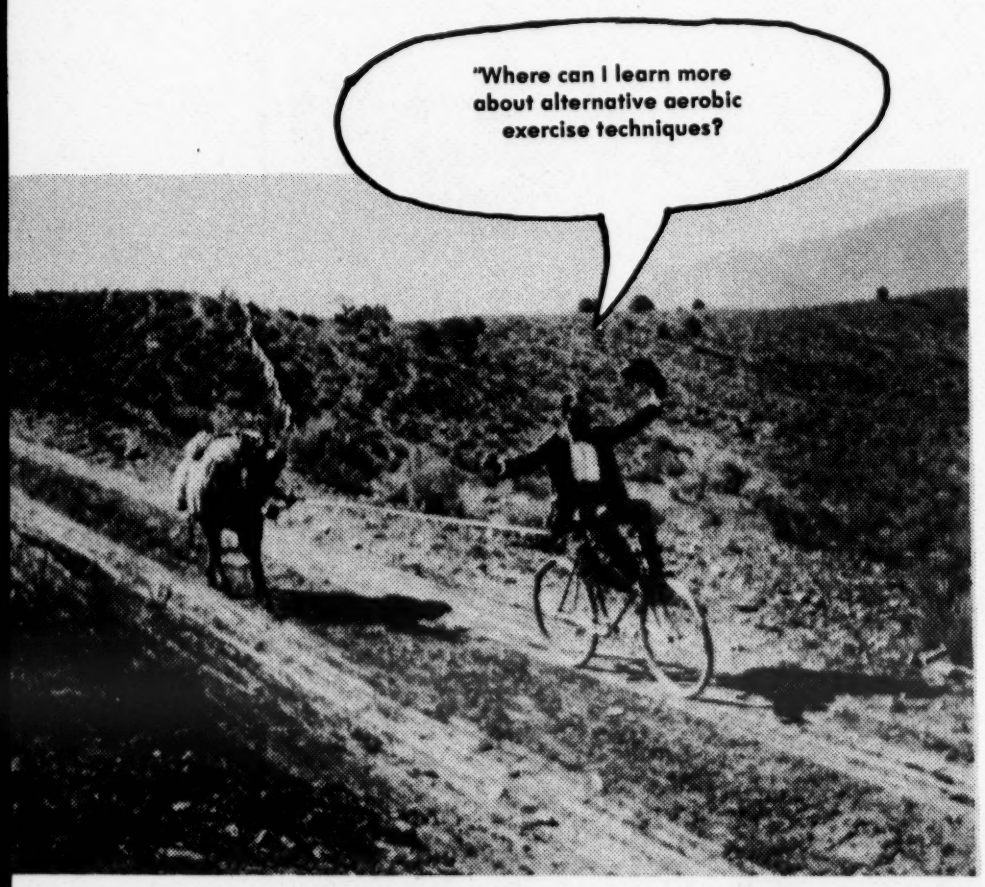
Gary Smith (11/5/85): Ed, I'm Gary Smith — sysop of the BBS Susan Katz mentioned to you in an earlier message. There have been several AIDS discussions on the board. The users of the board are a varied — physicians, psychologists, EMS personnel, in addition to people coming from backgrounds not related to the health care system. My primary interest is medical ethics — I am an M.D. currently doing Ph.D. work in ethics at Duke. I'd love to have you become an active user of The Humanities Forum TBBS, 919-286-3573.

[Note: Since these remarks appeared, I've learned of two more online sources of AIDS information: a bulletin board in San Francisco called Duboce Triangle (415/626-1246) and a newsletter on USENET (net.med). I left follow-up messages for Ed Hunt about them. —AK]

like a medieval town — it was planned and built what feels like many generations ago, but modern-day computer networkers must feel their way around its labyrinthine passages. Post your query on "PARTI BOARD" and networkers will guide you to valuable conversations elsewhere on the Source.

"Chatter" on Delphi. According to ENA co-organizer Lisa Carlson, this is the place to inquire about Delphi's services and those on other networks.

Conference 555 on EIES: Lisa Carlson manages this conference, and you must message her to be accepted. It has become known as a central gathering point for people who discuss the "how" of computer networking — how to run a great conference, for instance.



GO TELE on the WELL. Harry Goodman and I moderate this one. It is one of the most active conferences on telecommunications that I have ever seen, with many descriptions of other computer networks. People familiar with many obscure and non-obscure systems — including Viewtron, GENIE, and Chariot — log in here. This is also a good place to find out about USENET, the invisible web of public messages that pass between the thousands of computers that run an operating system called UNIX.

The Whole Earth Forum (GO WEC), the Online Today forum (GO OLT) and Telecommunications (GO TELECOM) on CompuServe. I manage the Whole Earth Forum, which devotes itself to the effects of technology on people. A communications software company manages the other. They're complementary, with almost no overlapping membership. GO TELECOM is familiar with bulletin boards; GO WEC folks are familiar with larger networks; GO OLT will help you find discussions on CompuServe itself. Note the sidebar showing how members of my Forum answered somebody's question about where to look for information about AIDS. ■

Out of the Inner Circle

The intent of this book is to give an introduction to how crackers (hackers who crack into systems) work. I thoroughly enjoyed it, but since it is not a step-by-step tutorial, it left me wanting more details on nearly everything it covers. But if you're interested in what makes hackers crack, and want a very useful glimpse into the subculture that makes almost everyone in the Establishment nervous, ***Out of the Inner Circle*** *is excellent.*

Among the specific methods Landreth outlines are the "Hack-Hack"; the decoy; direct access to memory; rapid-fire attacking the computer to trick it into thinking you have legitimate access; becoming a remote sysop; using a trapdoor; the Trojan horse; logic bombs; and worm programs. Anyone with more than a passing interest in computer security should be familiar with all these techniques, and Landreth's explanations are quite clear, general descriptions of how they work.

—Mathew McClure (sysop for Whole Earth's computer network, The WELL)

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Very few people, from the designers and operators of large systems to the investigators and law-enforcement officers who deal with hackers, understand *what* hackers are trying to do, much less *why* they're trying to do it. During my own trial, for example, the judge decided to postpone sentence until after I had undergone psychiatric evaluation.

What makes hackers hack? Why are they so dedicated? Why do they spend so much of their own time on other people's computer systems? And just what do they think they are trying to accomplish? It is not rare for a hacker to put in a sixty- or seventy-hour work week (without getting paid, of course). And these are not empty hours,

Out of the Inner Circle
Bill Landreth
with Howard Rheingold
1985; 230 pp.
$9.95
($11.95 postpaid) from:
Microsoft Press
10700 Northup Way
Box 97200
Bellevue, WA98009
or Whole Earth Access

filled by staring out the window. Hacking is a challenge and a game of wits, and during their work sessions, hackers are using all the skills and ingenuity they have developed. Hackers enjoy what they do.

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Normally, two steps are involved in the basic methods hackers use to gain unauthorized access to computers: First the hacker obtains an account. That's the easy part — sometimes it's as easy as calling and asking for one (posing as a university student, perhaps); more usually, it means getting account names from bulletin boards, company phone lists, or trash bins . . . maybe using a friend's or relative's account on The Source. . . .

It is the *password* that is a secret. Therefore, a hacker's second step involves ways of faking or discovering passwords. This is one of the areas in which lax security makes the hacker's job easier than it need be: Well-chosen passwords that are easy to remember, but difficult for a hacker to guess (yes, there are such things), and educated users who keep secret passwords secret are a very effective defense at this level of security.

2600

My favorite newsletter is ***2600****, which bills itself as "the world's largest monthly hacker newsletter!" With concrete information and delightful detail, its editors explain the intricacies of the phone system, the VMS operating system, satellite jamming, and other subjects of interest to those who believe information should be free and flow without barrier. Some of the most interesting features are the news roundups whose descriptions are quite inspiring. If you're a phone phreak or a potential hacker, this newsletter is definitely for you. I love it.*

—Matthew McClure

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AUTOVON is an acronym for "AUTOmatic VOice Network," and is a single system within DCS (Defense Communications System). It is presently mostly based on electro-mechanical switches, and is a world-wide network for "unsecure" voice communication for the DOD and several related agencies. . . .

How to Participate: You can easily alter your touch tone phone to make it have the extra column that utilizes the 1633 Hz tone. Standard Bell phones have two tone generating coils, each of which can generate four tones. This gives you sixteen possibilities of which you only use twelve. This leaves you with access to the four unexplored tones. A standard way to modify the touch tone phone is to install a switch to tell it whether to use the silver box tones or not. When the switch is in one position, you will get normal tones, in the other you'll get 1633 Hz tones. Bell calls these buttons A, B, C, and D, while the army named them, from highest to lowest, Flash Override, Flash, Immediate, and Priority. All other calls are called Routine if no precedence button is pushed. . . .

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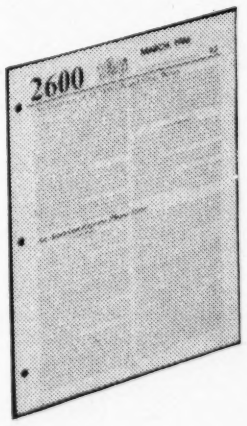
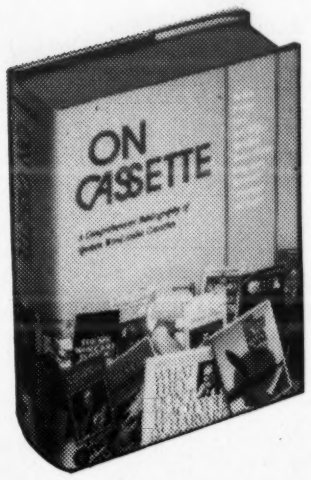
This story is a memory of hacking a formidable American institution — American Express. No, not AX's internal telecommunications network, but the corporation's toll-free charge card authorization computer. The following can be safely told as our "system" went down a few years ago. It all started in the summer of 1982. I had been on the lookout for various extenders and other nifty things a phone could link up with. Most were found by scanning and searching 800 number series using the time-honored "hang-up-if-a-human-answers" technique. After a long and fruitless afternoon of such looking . . .



2600
Helen Victory,
Executive Director
$12/year
(12 issues) from:
2600
P. O. Box 752
Middle Island, NY 11953

"Well, it's either our new television or somebody hacked our Sprint code again."



On Cassette

Bingo! What a gold mine! This handy reference lists every nonmusic audio cassette known to be around (about 11,500 of them). In it you can find out if that wonderful book you wish they had on tape is made or not. It'll tell you its price and who to order it from. You can look it up by title, author, or subject. It covers plays and poetry, too. And interviews, radio shows, seminars, speeches, and language instruction. I'd be flabbergasted if you had trouble convincing your library to buy this book.

—Kevin Kelly

On Cassette
Ernest Lee, Editor
1985; 655 pp.
$59.95

($63.45 postpaid) from:
R. R. Bowker
205 East 42nd Street
New York, NY 10017

Dostoyevsky, Fyodor. The Brothers Karamazov. 2 cass. (Running Time: 120 min.) (Fiction Ser.). 1985. 14.95 (ISBN 0-87188-194-2). Warner Audio Pub.
--Crime & Punishment. unabr. ed. Read by Walter Zimmerman. (Running Time: 1 hr. 30 min. per cass.) 1984. Part I, 8 cass. rental 13.50 (9120-A); Part II, 8 cass. rental 13.50 (9120-B). Bks on Tape.
Raskolnikov, a student in St. Petersburg, murders an old woman, a money-lender, & her sister to prove his theory that violence purifies the strong. But no sooner is the deed done than Raskolnikov's remorse lays siege to his resolve.
--Crime & Punishment. Tr. by Constance Garnett. Performed by James Mason. 1 cass. LC 81-740216. 8.98 (CDL5 1691). Caedmon.
Excerpts.
--Notes from the Underground. unabr. ed. 4 cass. (Running Time: 5 hrs.) 1984. 24.00 (C-34); rental 5.00. Jimcin Record.
The book relates the experiences of a singular young man who spurns the rule of God & man. The problem he faces is that of all nihilists, which is to deny authority while simultaneously explaining order.
--The Thief. unabr. ed. Incl. The Wedding; The Long Exile. Tolstoy, Leo. 6.95 (N-52). Jimcin Record.

Laser Disc Newsletter • Disc Deals

Two of several just-hatched newsletters for laser disc (movies mostly) aficionados. Can't tell which is the better one yet.

—Kevin Kelly

Disc Deals
John Leip, Editor
$20/yr. (12 issues)
from:
Disc Deals
Subscription/Ads Dept.
P. O. Box 391
Pine Lake, GA 30072

Laser Disc Newsletter
Douglas Pratt, Editor
$25/yr. (12 issues)
from:
Laser Disc Newsletter
Suite 428
496 Hudson St.
New York, NY 10014

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I have evidence that laser rot is present on discs that had some noise on the side when the disc was pressed. Later, this noise seems to spread like cancer infecting the entire side and becoming much worse and eventually rendering the disc unwatchable. I have noticed this phenomenon on several of my 270 discs and all of the discs that are now totally trashed are discs that had some minor noise on them when purchased. So I no longer stand for any noise, not one speck, on any discs I buy, no matter how minor. The discs that I've had for years that were perfect when new, are still perfect.

—Fred C.; Los Angeles, CA
—Disc Deals

BUCK ROGERS

Year: 1979
Catalog #: 13-002
Format: CLV
Video: Color
Audio: Stereo
Time: 89 minutes
Label Color: Red
Sides: 2

List Prices:
$24.95 (March, 1981)
$29.95 (July, 1981)

TOTAL 88 minutes

Although all early CLV pressing from DiscoVision suffered quality problems, BUCK ROGERS has been known to have an even higher than normal defect rate. BUCK was also the last DiscoVision title that did not have chapter stops placed before highlights in the film: a practice MCA continued under it's own labels until just recently.

BUCK ROGERS was the first DiscoVision title to have the now standard LaserVision markings on it. 14,319 copies were sent to dealers between February of 1981 and August of 1981. Buck last appeared in the Pioneer Video Summer 1983 catalog.

—Disc Deals

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Metropolis was once a silent film and so the reconstituted print naturally shows its age. The pressing, however, looked very reliable. Moroder did more than add music to the film. He located snippets of "lost scenes," tinted different parts of the movie with different colored washes, and re-did the title cards, converting many to subtitles. It is this latter action which disappoints us the most (the sound can always be turned off). Of all the silent films we have ever seen, the one title card which burns in our brain is, "The False Maria!" and now it is gone in favor of Bonnie Tyler and "Here She Comes." It is like trading in an illustrated book of children's verse for a television set.

—Laser Disc Newsletter

U. S. Video Source

A mail supply for video laser discs. Like the commotion in video tapes, there is a pell-mell rush of new titles released each month. They have an 800 phone number.

—Kevin Kelly

U. S. Video Source
Joan Lynn, Editor
Catalog (including monthly updates)
$4.95

from:
U. S. Video Source
P. O. Box 404
Cedar Grove, NJ 07009
1-800-USA-DISC
(872-3472)

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Title	Price
Ghostbusters	29.95
Beverly Hills Cop	29.95
Gremlins	34.95
A View to a Kill	39.98
Rambo First Blood II	no release date
Return of the Jedi (March '86)	39.98
The Breakfast Club	34.98
Pinocchio	34.95
A Passage to India	39.95
The Falcon and the Snowman	34.95

Practical Traveler

When I have a travel question this is the expert I reach for. It's a reference collection by the only decent newspaper travel columnist in the country, Paul Grimes at the ***New York Times.*** *I use it when I want to find out how to charter a bus, or rent a car in Europe, or scare up some legitimate tricks for buying an around-the-world airline ticket. His conception of travel is admirably broad, and his facts well researched. To keep current you might check your local Sunday paper; his column is syndicated in many of them.* —*KK*

The New York Times Practical Traveler
Paul Grimes
1985; 412 pp.
$10.95
($11.95 postpaid) from:
Random House
Attn.: Order Dept.
400 Hahn Road
Westminster, MD 21157
or Whole Earth Access

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A more common way to save money on domestic flights is to take advantage of what the trade calls flyover, point-beyond or hidden-city ticketing. For example, not long ago the normal one-way coach fare between San Francisco and Atlanta was $420 on nonstop flights of Delta or Eastern. But Delta was selling seats on the same flight to Tampa, Florida — a point beyond Atlanta — for $179. Thus, a San Franciscan bound for Atlanta could have saved $241 by buying a ticket to Tampa and simply leaving the plane at its first stop.

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In the New York area, a forty-six-passenger bus equipped with a rest room will probably rent for $500 to $700 a day for transportation alone, depending on distance. Elsewhere the rates are probably cheaper.

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Contrary to what seems to be popular opinion, American embassies and consulates are not travel agencies, law offices, Red Cross stations, banks, or hostels for the weary of foot and empty of pocket. Their staffs will not change hotel reservations, post bail, tend the sick, lend money, or provide sleeping bags to ease the discomfort of sleeping on their foyer floors. "American travelers' expectations of what consuls can do can be extraordinarily high."

So . . . You Want to Be An Innkeeper

I have owned and operated a bed and breakfast inn for nearly three years now. I wish this book would have been available when I started. Fortunately, my inn has accomplished all the suggestions and tips listed in the book, but not without a lot of trial and error.

It is obvious that the authors have lots of experience in the bed and breakfast industry. They paint an excellent picture of the trials, tribulations, and rewards of opening and running a bed and breakfast inn. I try to keep up on all the literature available about my business and profession, and this book is by far the best on the market.

—*Hugh A. Daniels*

So . . . You Want to Be an Innkeeper
Davies, Hardy, Bell & Brown
1985; 220 pp.
$10.95
($11.95 postpaid) from:
101 Productions
834 Mission St.
San Francisco, CA 94103
or Whole Earth Access

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The longer an inn is in business, the more likely the innkeepers will hire staff, take vacations, and even move off the premises. This is important for the innkeepers, but guests often don't like it; they tend to want to see the owner.

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An ideal neighborhood will have interesting old houses (or vacant lots suitable for building) zoned for multiple residential use in an area that includes motels and restaurants. Finding such a spot can greatly reduce the time and money involved in getting necessary approvals.

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The telephone is so much the lifeline of an inn that it pays to plan an efficient, functional, handy system.

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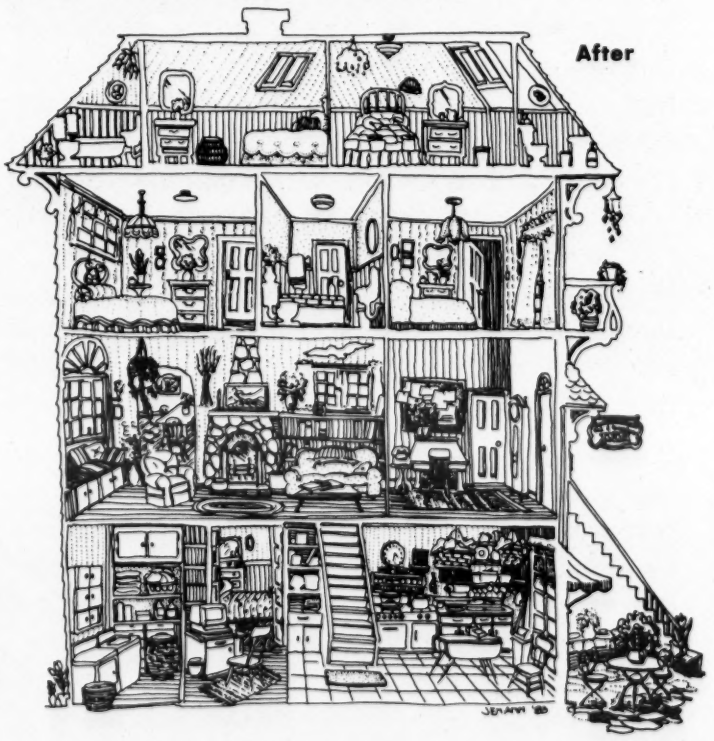
Innkeepers are more likely to get tired of serving the same old thing for breakfast than guests are to tire of eating it. Experimentation is not always greeted with delight. If you want to serve a Guatemalan breakfast with refried beans, you had better make granola available for the more conventional eaters.



AUSTRALIA

Where Being Alternative Isn't So Radical

by Bird Brenner

CRADLED IN THE CENTER OF AN ANCIENT volcano in southeast Australia is the village of Nimbin. It is a busy village, painted in psychedelic designs, and every shop on Cullen Street, the main thoroughfare, has a Day-Glo storefront. Most of the people in town are colorfully dressed, their attire ranging from the paisley/tie-dye/beads-and-bells motif to Mohawk hairdos and safety pins imbedded in black, spiked leather.

This is the heart of Australia's Rainbow Region, an unofficial province that may well be the last bastion for sixties hippies. Covering approximately 400 square kilometers from southern Queensland to north-central New South Wales, spanning the coastal plain and valleys from the Pacific Ocean to the Great Dividing Range, the Rainbow Region boasts the largest number of communes and intentional communities in the Southern Hemisphere — over 100 by unofficial tally, with another three dozen or so rising and declining as communes are wont to do. Several of these intentional communities in the Rainbow Region were established nearly twenty years ago by sixties hippies seeking a back-to-the-land remedy for urban alienation. They range in size from informal yet clearly defined shared-land arrangements of a few families to sprawling real estate holdings holding thousands of people at a time.

Some European and American travelers Down Under sniff haughtily that Australia is 20 years behind the rest of the world, so they are experiencing their sixties now, but this is simply not the case.

In many ways, Australian history and culture uncannily parody their American counterpart. The two countries do have similar early histories as isolated British colonies, outposts of English culture in largely unexplored areas, places where crowded Mother England could conveniently dispose of large numbers of riff-raff, rebels, prisoners, religious heretics, and the like. These people became the new settlers, the founders of modern nations. So it isn't really all that strange when one considers how alike the two cultures are today.

But alternative culture in Australia has a much stronger impact on the status quo than the American and European versions seem to have. Unlike the American trend, whereby countercultural innovations tend to become co-opted, mass-marketed, and de-focused, the sheer numbers of the Australian "movement"

People of the Dreamtime

An aboriginal artist at work in the Cave of the Rainbow Serpent at Yuendumu in central Australia.

(environmentalists, artists, hippies, punks, gays, feminists, and any other fringe-of-society elements) and its general cohesiveness make it a much more powerful force in society. And unlike European movements, violence seldom mars the patina of social change. There is less of a conservative attitude to fight against in Australia — no top-heavy nuclear weapons industry to support, fewer imperialist governmental policies, few conformist socialist pressures. The military and corporate nightmares Australia has to contend with generally come from America and Britain.

Leading magazines, the equivalent of *People* and *The National Enquirer,* regularly run stories about scenes such as "The Hippie Stockmarket" (the highly successful Channon Market). The television media gives much more attention to pressing environmental issues such as uranium mining and rainforest devastation. For instance, top attention was given to Greenpeace dumping low-level radioactive waste on the steps of Parliament, and to colorfully attired hippie "families"

(the Nomadic Action Group) chaining themselves to trees about to be felled in the tropical rainforest.

The communal movement in Australia's Rainbow Region differs from American experiments in community living in several important ways. Australian communities rarely, if ever, evolve or revolve around a central power figure; they originate more in the common interests of small groups of people, then expand if the resources and personal chemistry are right. Few of the Aussie communes have a specifically-stated spiritual focus. There are large amounts of unspoiled, inexpensive land to be shared by only a few people. In addition, the Australian government actively supports communities with grants, and encourages unemployed urban youths to explore alternative lifestyles and intentional communities. Federal funds actively promote experimental farms where urban youths can go to learn self-sufficiency skills.

The Australian counterculture represents a cohesive, perhaps more highly visible group within the general population here than in the United States or Europe. Rather than succumb to factionalism, wherein small groups with different interests struggle against each other for the same recognition and resources, a wide spectrum of special interests has merged to create a broader cultural entity. For example, gay-oriented and Christian hamlets are able to co-exist within the framework of a large community with neither group trying to inhibit the other.

The socialist-oriented, post-World War II Australian government and culture provide a solid background for a functional alliance of factions. The government's support of the back-to-land movement and self-sufficiency training for unemployed urban youth continues a legacy begun twenty years ago. Organizations such as the Australian Association of Sustainable Communities and Down To Earth represent increased governmental cooperation with the alternative movement, and the election of communards to local councils affects governmental involvement on a local level, particularly in the areas of multiple-occupancy land use politics and development plans.

The luxury of learning from others' mistakes, particularly the observation of American and European popular history, has allowed for a streamlined communal development in the region. The problems of hard drug abuse, loose or nonexistent financial obligations, ignorance of personal hygiene and public health principles, and the pitfalls of guru pursuit have been examined by members of the community at large, with an eye toward the avoidance of such difficulties.

The kind of debilitating problems the American communal movement faced two decades ago — heroin and speed abuse, the rise of self-proclaimed cosmic messiahs, and dogmatic ideological posturing with pseudo-revolutionary overtones — never really emerged in the Australian movement. Perhaps this is due to the governmental position of more concrete support and less harrassment; there was less to fight against in the movement's infancy. The Australians, true to their Aboriginal spiritual heritage, have held a "nature first" perspective in drug use and land holdings, condemning artificiality in any form. And, like true rebels, they have never been ones to follow leaders. Even their national folk hero, a renegade named Ned Kelly, is an outlaw.

More than 70 "underground" publications serve Australia's flourishing counterculture, and the traveler bound for Antipodean shores should make an effort to read some of this material. Not only do these publications come in handy when planning an

BILBY *(Macrotis lagotis)*. This strange Australian is losing out to graziers and feral predation. —*Simply Living*

Ancient cave painting in the Kimberleys.
—Maggie's Farm

itinerary, but advertisements for vegetarian restaurants, metaphysical bookstores, concert venues and the like will clue you in to places frequented by locals yet pointedly ignored by standard international guidebooks.

Maggie's Farm is possibly the most eclectic of the contemporary Australian publications. Each issue is completely reader-written and assembled in some form of thematic order by a dedicated volunteer staff. Regularly featured topics include permaculture and organic gardening techniques, news about meditative music from around the world, environmental updates, and theoretical treatises about ley-line energy grids. Often fiction and underground comics appear. *Maggie's Farm* maintains an active exchange with other international alternative publications, and usually prints a compilation of clippings from these sources.

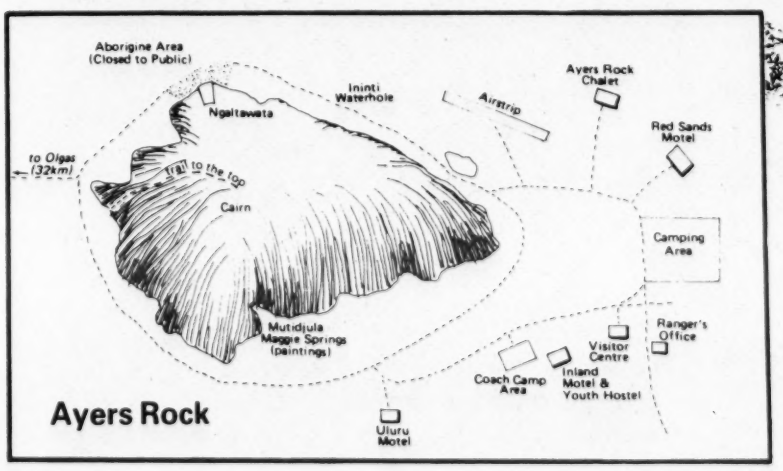
Simply Living is a glossy, back-to-the-land tome, an Australian cross between *Mother Jones* and *Mother Earth News*. It's got the definitive information on permaculture and organic gardening methods, plus a strong liberal perspective on political issues such as uranium mining, the Soviet peace movement, and environmentalism. Its "Green Pages" include contributions from groups running the gamut from Greenpeace to animal liberation to BUGAUP, the radical and popular clandestine billboard-defacers. It's an attractive, cohesive publication, a bit more expensive than the others.

Grass Roots follows the middle ground between *Maggie's Farm* and *Simply Living*. A reader-written magazine, it's more rural and less cosmic in focus than *Maggie's Farm*, and has a more homegrown feel to it than *Simply Living*. What sets this magazine apart from the others is its shining glory — the Feedback pages, a public forum combining political opinions, gardening and animal husbandry hints, and truly outrageous personal ads. The thoughtful sincerity of *Grass Roots* readers is evident in these pages. If you're looking to make contact with like-minded Australians, this is the place to do it.

Southern Crossings is the definitive New Age spiritual magazine in Australia. It features interviews with luminaries on the international lecture and workshop circuit, and serves as a clearinghouse for local gurus, teachers, and activists. It also includes Aboriginal spirituality and environmental conservation as subject matter, and often publishes meditative artwork.

Armchair "alternates" (as the Aussies say) will value *Social Alternatives*, a scholarly publication from the University of Queensland. In the publisher's words, "*Social Alternatives* provides a forum for the analysis of social, cultural, and economic oppression and focuses on the development of alternative strategies to effect social change towards greater freedom and a more participating society." Excellent outhouse reading; looks good on the coffee table right next to *Forbes* and the *Wall Street Journal*. It does provide a comprehensible, intellectual dissection of the movement in Australia and, to a lesser extent, internationally. Somebody's got to do it.

There's one guidebook worth purchasing for your journey. Lonely Planet's classic *Australia: A Travel Survival Kit* is precisely what its title implies, though it never delves very deeply into specifically alternative Australia. Two paragraphs treat the Rainbow Region, for example. Following this guidebook strictly will yield a youth hostel/public transportation/offbeat-tourist-attraction journey; it's best to use the book as a jumping-off point for greater adventures. One must be willing to take a few risks if one is to get to know tribal Aboriginals in the bush, or to camp out at a commune or two. The maps are accurate, and its restaurant and accommodation suggestions are worthwhile in the cities. It's witty, well-written, and makes an excellent companion on the road. ■



Ayers Rock

Australia: A Travel Survival Kit
Tony Wheeler
1983; 576 pp.
$12.95 from:
Lonely Planet Publications
P. O. Box 2001A
Berkeley, CA 94702
or Whole Earth Access

•

For the past year, our publications *Permaculture One* and *Permaculture Two* and the *Permaculture Journal*, have carried a tree "tax" on the wholesale price of each one sold. These monies are paid into a fund which goes to purchase trees. Recently the Permaculture Institute sent out a letter to about 85 alternative magazines and newsletters urging them to tax their own publications and to report on any tree planting projects they initiate.

—Simply Living

UBS - $6 a year (4 issues) add 2.50 per yr. for o/s.

Send to **Power & Desire**, P.O. Box 334 Fitzroy Vic. 3065 Australia. Contributions also welcome, write to us for guidelines

WHOLISTIC LIVING

WHOLISTIC LIVING NEWS - attuned level catalogue and literary recorder of active readership lifestyle learning exchange and spiritual guidance reference point.
The Assoc. For Holistic Living, Box 16346, San Diego, Calif.

HERBOLOGY MAGAZINE

growing knowledge exchange of herb and seed advancements and techniques. Official organ of the Aust. Herb Society.
The Secretary, AHS, PO Box 110, Mapleton, Qld. 4560
SUBS- includes society membership $5,

REBEL WORKER

—Maggie's Farm

•

There are places all over Australia to avoid. These we call "Sacred Sites", and they are sacred in the hope that white people will leave them alone and not find out about these places. But they do, and they're becoming known and I just don't know if people will use that for good or for bad. On the North Coast is one of the circle of pyramids. I don't know where, I haven't been told yet. You know there's three "lost pyramids" (in Aust.) and the old people say there is one here that completes the circle with the biggest crystal in the world in it. This is the central energising crystal that sends out energy to all the other points.

—Maggie's Farm

•

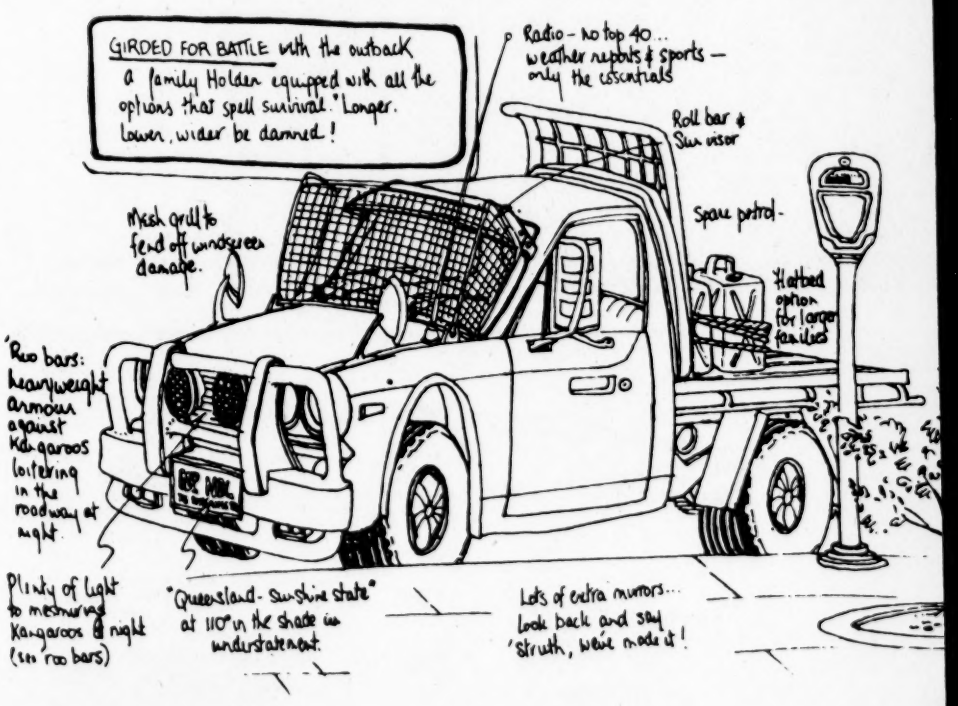
This [alternative] style is . . . being taken seriously by the State and federal governments. In fact, a research project was stimulated by Mr Hawke's comment at the International Labour Organisation in Geneva in 1983, where he said that alternative self-sustaining communities could be one way of taking the heat out of the unemployment crisis, by reducing the numbers of people needing paid jobs.

—Simply Living

•

On top of the visa visitors are also required to have an onward or return ticket and 'sufficient funds' — the latter is obviously open to interpretation. Like any country Australian visas seem to have their hassles. We've heard from Japanese and other young Asian travellers from time to time about the difficulties of obtaining Australian visas. One young Japanese even recommended applying for an Australian visa in a country where there was no Australian embassy, since in that case the application would be handled by the British embassy and 'British do not care who goes to Australia!' If you do hit visa problems, while trekking around Asia for example, the best advice is to try somewhere else.

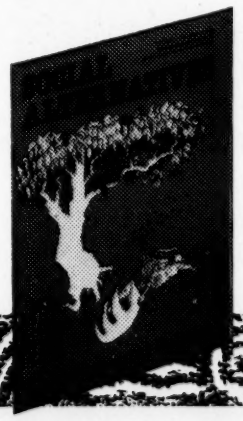
—Australia: A Travel Survival Kit



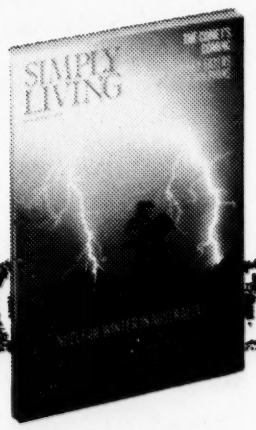
Maggie's Farm
Paul White, Editor
$12/year
(4 issues) from:
Maggies Farm
Department Phoenix
P. O. Faulconbridge
Blue Mountains
NSW 2776 Australia

Southern Crossings
$5/sample copy
from:
Southern Crossings
14 Thomas Street
Chatswood, Sydney
NSW 2067, Australia

Grass Roots
$3/sample copy
from:
Grass Roots
Box 764
Shepparton, Victoria 3630
Australia



Social Alternatives
$3.25/sample copy
from:
Social Alternatives
Department of
External Studies
University of Queensland
Brisban, Queensland 4067
Australia



Simply Living
Pip Wilson, Editor
$5/sample copy
from:
Simply Living
P. O. Box 704
Manly, NSW 2095
Australia

SOFT TECHNOLOGY

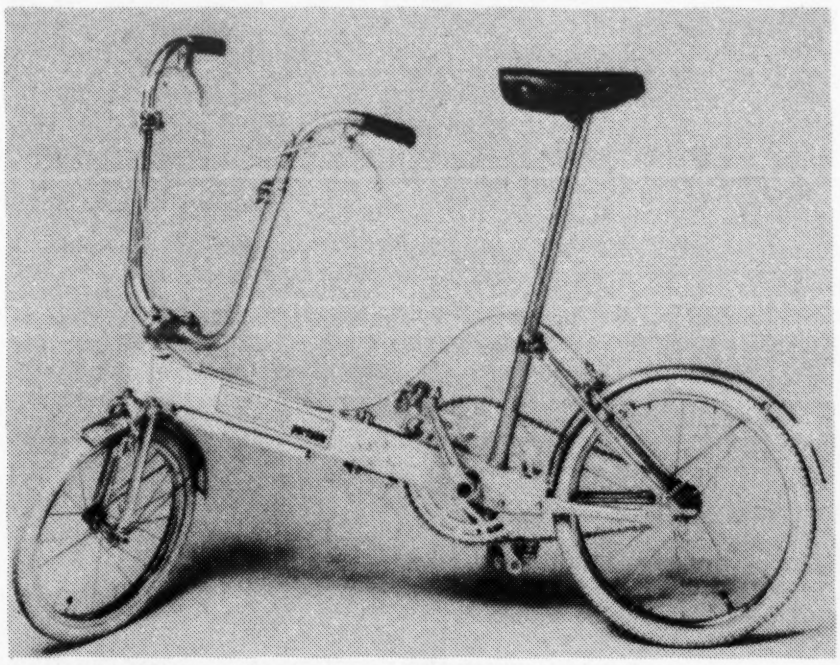
Folding Bikes

Why? you might ask. Two main reasons: they store compactly out of reach of thieves, and they can be with you under circumstances where a full-size bike can't, such as on a bus or even an airplane. I've taken mine canoeing downriver and ridden it back to get the car. There is a remarkable variety of folders available. The trend is increasingly toward easier folding, good road manners, and cleverness.

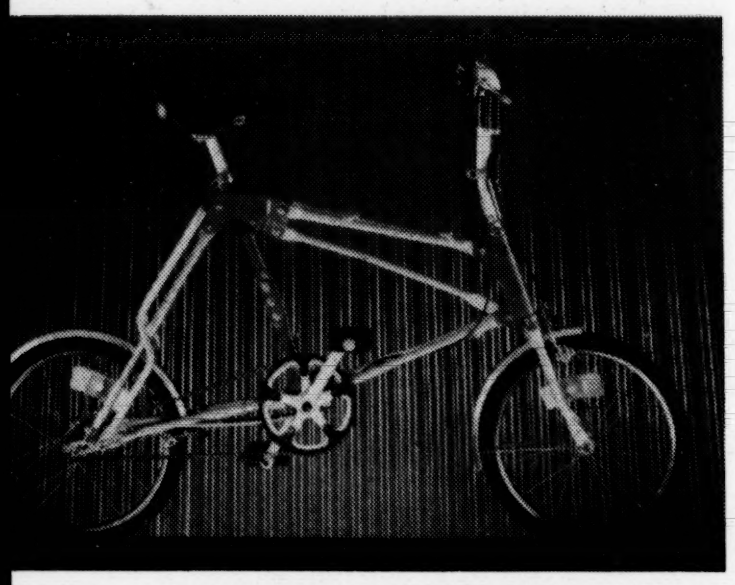
Berkeley Wheelworks offers the biggest selection of folding bikes anywhere and will modify them to your taste in their machine shop if you so desire. These folks are experts on the subject. —*J. Baldwin*

Folding Bikes
Catalog **free** from:

Berkeley Wheelworks
1500 Park Avenue / C 104
Emeryville, CA 94608



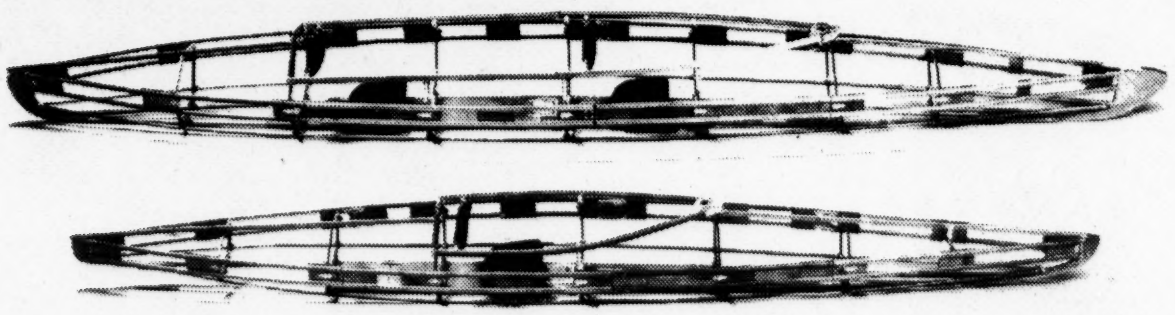
Bickerton (about $350): lightest (mine has served well for 10 years —JB).



Airframe (about $500): most advanced.

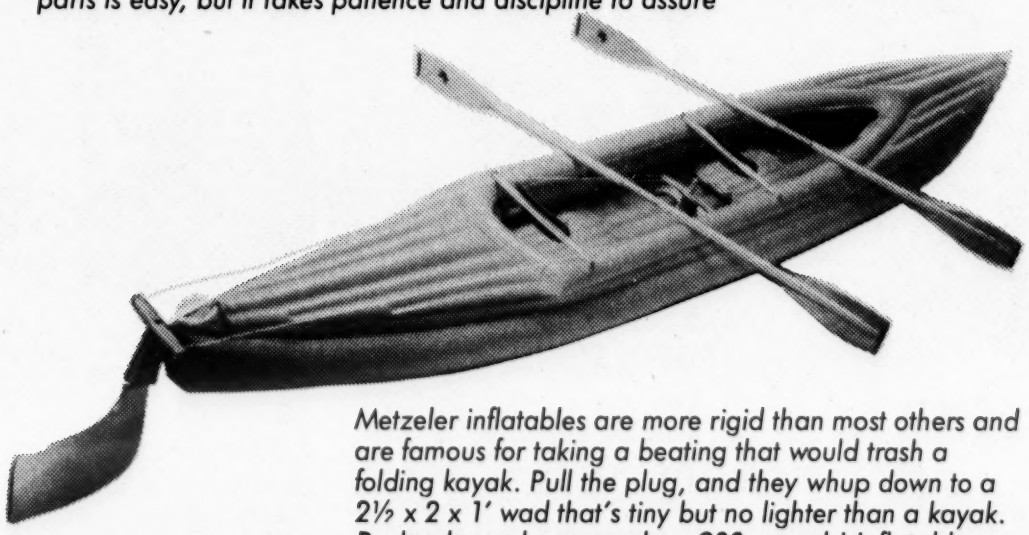
Portable Boats

Think of kayaking one of those pristine rivers you see in Alaska magazines. Nice, but how do you get a boat there? Or, more prosaically, wouldn't it be nice to have a boat with you on your vacation? Except you have to worry about it being stolen from your roof rack. The answer is a portable boat. They come in three basic types: skeleton-with-skin, sectional take-apart, and inflatable. I can tell you from happy experience that a portable will expand your horizons. They'll store in a closet, too. Two examples of the breed are Klepper and Metzeler inflatables.



Klepper "Aerius"
$2,000 (approx.)
Information **free** from:
Klepper America
35 Union Square West
New York, NY 10003

The Klepper is heavy duty and tough enough for an Atlantic crossing (someone did it!), but nonetheless stows in a pair of dufflebags. Assembly of the elegantly crafted parts is easy, but it takes patience and discipline to assure that sand is not being trapped in the precision joints — sand-jammed joints can make disassembly a bear. The frame might well win a prize in a sculpture exhibit. —JB



Metzeler Inflatable Boats
$495-2,995
Information **free** from:
Leisure Products
Marketing Systems, Inc.
1044 Northern Blvd.
Roslyn, NY 11576

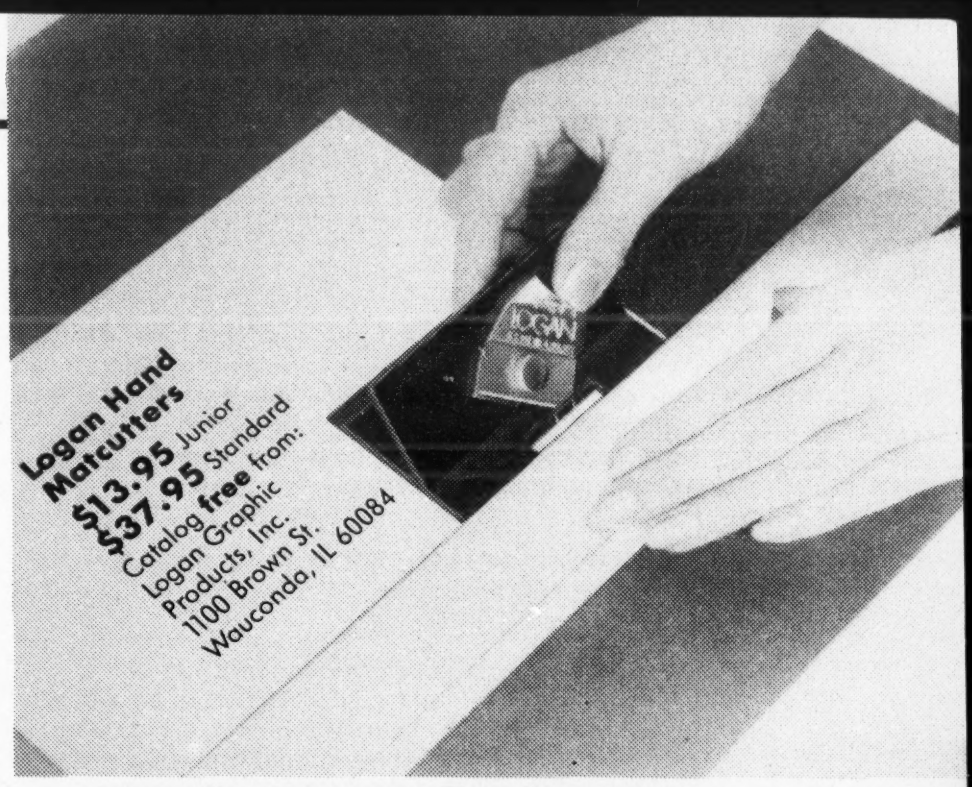
Metzeler inflatables are more rigid than most others and are famous for taking a beating that would trash a folding kayak. Pull the plug, and they whup down to a 2½ x 2 x 1' wad that's tiny but no lighter than a kayak. Payloads can be as much as 900 pounds! Inflatables tend to be annoyingly or even impossibly skittish on windy, open water. —*JB*

Logan Hand Matcutters

Until this well-designed gizmo came along, the only "hand" devices available to cut mats for framing pictures didn't do a very accurate or clean cut, and the only alternative was the large, expensive, table-sized cutter intended mainly for professionals. With the Logan you can cut an opening to exactly where you want it and not a hair off in either direction. The bevel is a beautiful 45 degrees and clean as can be because it's cut by a standard single-edged razor blade which is easily changed when it gets dull. Armed with this device and a good stiff straightedge, all it takes is a few practice cuts and one can rapidly produce excellent quality mats at a minimal cost.

—David Clarke

I had a common X-acto brand mat cutter and every time I'd use it I'd cry, pull my hair, and rend my clothing. Then I saw David Clarke's review — bought the Logan mat cutter with built-in marking gauge ($37.95), and now cut perfect, tearless mats. *—Kathleen O'Neill*



Threads

The publishers of ***Fine Woodworking*** *and* ***Fine Homebuilding*** *have come out with another beautiful magazine,* ***Threads.*** *With a style and look all of its own,* ***Threads*** *is not just another pretty face. It is filled with interesting, well-written articles that cover the gamut of the fiber arts field. It has articles about and by leading textile artists as well as pieces on freestyle embroidery, Gobelins-style tapestry, weft twining, hand quilting, knitting, dyeing, felting, sewing hand wovens, and on and on. My particular interests are in embroidery and weaving, but I find that every time an issue of* ***Threads*** *arrives, I read it cover to cover. The piece de resistance is the back cover, which is like a great dessert after a wonderful meal.*

—Susan Erkel Ryan

Threads
John Kelsey, Editor
$16/year (6 issues) from:
Threads
The Taunton Press
63 South Main Street
Box 355
Newtown, CT 06470

•

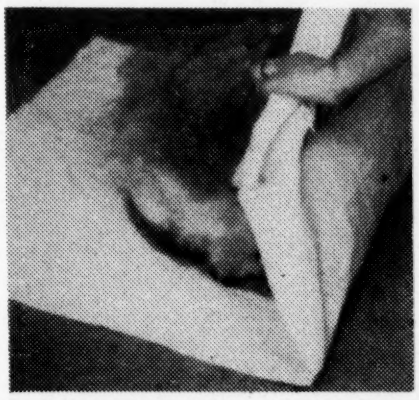
The best wool for making felt at home has a short staple, or fiber length — roughly 1 in. to 1½ in. Long-staple wool requires more agitation. Roving, usually composed of long-staple wool, requires extended felting. In a blend of fibers, only 10% need be wool for the fibers to felt together.

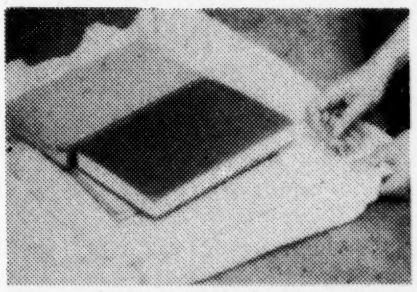
Making a one-piece felt hat:

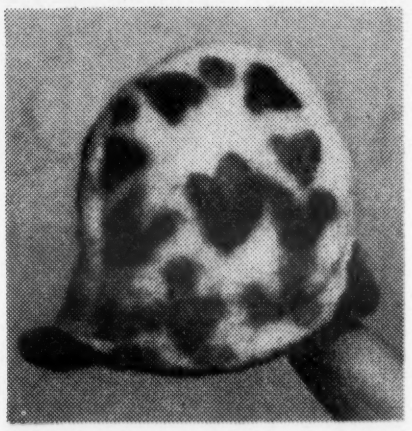
Place two layers of batts on the design layer so that wool is in contact with wool only around the 2-in.-wide edge. Then cover the six-layer stack of wool with the base muslin.

March uses hand rolling and machine agitation to felt the package. She squirts on a mild detergent, then pours hot water over the package.

She works in the soap and water with a rolling pin, then puts the package into the washer.







The Secrets of Consulting

If Machiavelli were alive today, he would be a consultant. This is the book he'd write.

—Art Kleiner

•

In order for a consultant to get credit, the client would have to admit there had been a solution. To admit there was a solution, the client would have to admit there was a problem, which is unthinkable. As a result, the only consultants who get invited back are those who never seem to accomplish anything.

•

Once you eliminate your number one problem, you promote number two.

•

Many years ago, Sir Ronald Fisher noted that every biological system had to face the problem of present versus future, and that the future was always less certain than the present. To survive, a species had to do well today, but not so well that it didn't allow for possible change tomorrow. His fundamental Theorem of Natural Selection said that the more adapted an organism was to present conditions, the less adaptable it tended to be to unknown future conditions.

We can apply the theorem to individuals, small groups of people, large organizations, organizations of people and machines, and even complex systems of machinery, and can generalize it as follows:

The better adapted you are, the less adaptable you tend to be.

•

"I'd be curious to know how come you gave *me* this contract," I asked. "But don't tell me if it would violate some confidence."
"Not at all," LeRoy assured me, raising his juice glass in a mock toast. "You got the contract because you were the only one who passed The Orange Juice Test."
"So how does it work?"
"Well, imagine that you had to choose a site for an annual sales convention, accommodating seven hundred people."
"I have some experience with that problem. It's not easy."
"Yes, but with The Orange Juice Test, you can do pretty well. At the very least, you can eliminate some of the losers."
"I'm all ears. How do you do it?"
LeRoy smiled over his coffee cup. "When you see the banquet manager for a hotel, you pose the following problem: The founder of your company has established a hallowed tradition for your sales meetings, requiring that each morning's sales breakfast start with a toast to success. . . ."
"And that each of the seven hundred people must have a large glass of freshly squeezed orange juice."
"A *large* glass?"
"Yes, large. Not like this one, which they simply call large on the menu. But a drinking-glass size, at least."
"And *freshly squeezed*?"
"No more than two hours before serving."
"I see the problem."
"Well, that's the test. After posing this problem, you listen to what the banquet managers tell you."
"They'll probably say that it can't be done."
"That might happen," LeRoy said, "in which case they flunk The Orange Juice Test."
"But I know managers who would say, 'No problem,' just to get the business."
". . . which also flunks The Orange Juice Test. They might be lying, or they might really think there's no problem. I don't know which is worse, but I don't want to have my convention at either place."
"So who passes?"

The Secrets of Consulting
Gerald M. Weinberg
1985; 228 pp.
$25.00
($26.50 postpaid) from:
Dorset House Publishing
353 West 12th Street
New York, NY 10014
or Whole Earth Access

"The one who says what you said to us, when you took this job."
I was puzzled. "I don't remember discussing orange juice. What did I say?"
LeRoy smiled. "You said, 'That's a real problem. I can help you with it, . . . *and this is how much it will cost.*' So you passed the Orange Juice Test."

I use the test every day. Whenever I want a service performed, I tell them what I want, they tell me how much it will cost to get it from them, and I decide whether it's worth it to me.

The Orange Juice Test has saved me hundreds of hours of haggling with the wrong people. I use it in service stations, in the office, in restaurants, and even in choosing hotels.

•

Little by little, as you keep solving your worst problem, the percent of trouble caused by your worst problem will diminish, and your remaining problems will tend to become relatively equal in percentage. That's why The Level Law holds:

Effective problem-solvers may have many problems, but rarely have a single, dominant problem.

To the extent that The Level Law holds true, a consultant can learn quite a bit about a client by observing the distribution of trouble across the existing problems. If you as a consultant find a relatively even distribution of problems, you may hypothesize that your clients are not seeing one major problem, but it is more likely that they have been keeping up with their problems without letting any one problem get out of control.

The fact that no one major problem exists implies that some effective problem-solving mechanisms are already in place. Even though you may not solve any spectacular problem, you can identify the client's favorite problem-solving mechanisms in order to use them in your own suggested methods. This should make you look good to the client.

The child who receives a hammer for Christmas will discover that everything needs pounding.
—The Law of the Hammer

Shattered Dreams

Multi-Level Marketing (MLM) is the basic business method used by retailers like Amway and Shaklee. In their approach you, the distributor, don't merely sell stuff to customers, you also sell them a job, as your agent, to sell merchandise to their friends, who also become agents, who sell to their friends, who recruit others. . . while you reap a commission at each level. Pyramid power. If this sounds fishy to you, then you don't need this book. But if you are tempted by the real tales of wealth and success told by some folks in this business, then let this be your counselor. The author, a former MLM junkie who's tried out many chain letters and four different MLM schemes, knows where all the rocks are in these murky waters.

—Kevin Kelly

Shattered Dreams
Gary Tartaglia
1985; 119 pp.
$14.95
($15.95 postpaid) from:
Calaciuva Publications
12500 Oakview Boulevard
Cleveland, OH 44125

•

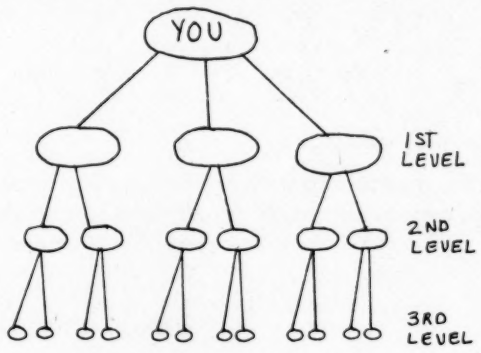
Many MLM distributors I met felt that "they" owned their own company, which legally and technically they do as independent distributors. The reality is that they are *still working for someone else* as an agent!! They still have to obtain their supply of products from the Prime Source!

•

The single biggest myth in MLM today regardless of the company, is *"There's no selling involved."* Of course there is selling involved! How else are you going to convince someone to buy something from you, a product that most people have never heard of in the first place, and make all this money in MLM?

•

Remember that the people who do get rich in MLM have all come from real estate, advertising, mail order, and sales in the first place. They used their sales skills to get rich! They would have gotten rich with or without MLM. They would have found another vehicle if MLM did not exist. So, they did not get rich because of MLM, they got rich because of their own skills, talents, and ability in sales!! MLM was only their vehicle to do so. They also had the right kind of personality as we have discussed.



A TRADITIONAL MLM NETWORK

Buying and Selling a Small Business

Buying a going business is usually a lot more difficult than starting one from scratch and can be fraught with tax and legal complications. In some ways, however, a person who buys a going business has an advantage over one who starts a new business, because he has more facts to work with — if he knows where to find them and how to use them. This concise and practical U.S.B.A. book, aimed primarily at the buyer, is a good place to start.

—Bernard Kamoroff

Buying and Selling a Small Business
Verne A. Blum
1979; 122 pp.
$5.00 from:
Superintendent of Documents
U. S. Government Printing Office
Washington, DC 20402
or Whole Earth Access

•

A seller often thinks of value as representing the money he has invested through his years of ownership. A buyer is tempted to consider value as a fair price for tangible items such as equipment and inventory. These factors are important, but they have value only to the extent that they contribute to future profits. An owner may have invested $40,000, the tangible assets may have a current value of $20,000, but it is the *profit potential* that establishes the value of the total business.

•

A buyer must think beyond the purchase price to determine the amount of capital he needs. Unless he does he will find his resources embarrassingly and probably disastrously wanting. Here are some questions that must be asked about his capital needs:

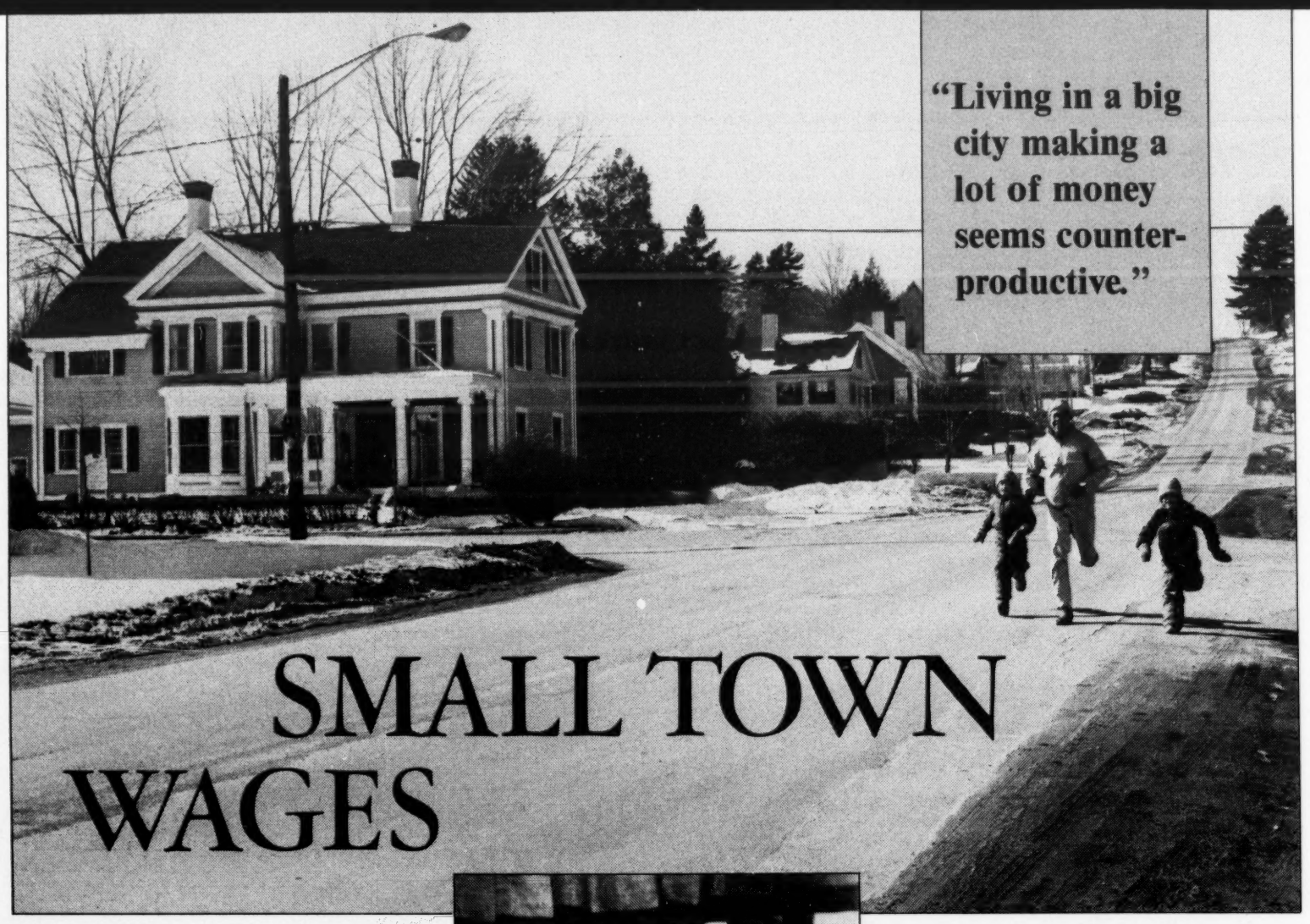
Do I have enough capital to pay the purchase price?
Do I have enough capital to support 1 to 3 months' operations — such as payroll and other cash expenses — while the business reaches a self-supporting stage?
Do I have some extra capital to cover needs I may have overlooked (perhaps 10 to 15 percent of the purchase price)?

SuperRom

I have long used my three-ring binder-sized Model 100 as a portable note-taking machine. SuperRom, a $200 chip that plugs into the back of the Model 100, effectively makes it a portable extension of my brain. For instance, it includes an outliner — I can easily arrange and rearrange my thoughts and notes, and then turn them into a full-fledged piece of writing when I get back to the office. Or the print formatter — I can show up at a distant office, write something quick (like this review) on my own little computer, and print it out on someone else's printer with double-spacing, extra-wide margins, page numbers, or nearly anything else I require. The great portable spreadsheet LUCID is also included — if you have to redo your tax calculations while on a bus to Mexico, you'll find SuperRom invaluable. I'd say offhand it makes my Model 100 about twice as useful.

—Art Kleiner [Suggested by Woody Liswood]

SuperRom
$199
Information free from:
Portable Computer Support Group
11035 Harry Hines Boulevard #207
Dallas, TX 75229



"Living in a big city making a lot of money seems counter-productive."

SMALL TOWN WAGES

by Lance Tapley

The author runs with his twin kids. From his office window (left), you can see downtown Augusta, Maine.

MY commute to the office takes exactly one minute, forty-three seconds. By foot. I come home to lunch, a refreshing break from the long hours I put in at the small business I own. In the summer we have salads with lettuce, radishes and tomatoes from the tiny garden beside the house. Sometimes we take our twin six-year-old boys and walk to a nearby park for a picnic.

On the walk we are likely to be joined by neighborhood children. When my wife and the twins return to the house, several of them might spend the rest of the day in our yard. Their parents have only a vague idea where they are. There is no danger to kids in this collection of narrow streets, neat, old white houses, and tall trees.

My wife has worked full-time in the past, but now she wants to be with the kids. We also have a fifteen-year-old boy and a baby due in a few months. All our children can walk to school. The city's high school and neighborhood elementary school are only a few blocks away. The twins are able to come home for lunch.

I have a car for my business, but I use it primarily for out-of-town trips. The city's business district, with the post office, banks, office supply stores, is about three blocks down the hill from my office. The public library, where I go sometimes for undisturbed work, is only a block away. My wife works there ten hours a week as a library assistant. This provides a little money, is a break from housework and tending the kids, and she loves working with books. I once mentioned to a friend, a woman lawyer married to a lawyer, that my wife is content with her "little job." The friend became indignant at my use of that phrase. However, upon checking, I can report that my wife feels this is accurate.

Across the street from the library is the YMCA, where we swim, the twins do gymnastics, my wife takes aerobics clases, and I fool around playing basketball with my oldest son. On another corner is a small Greek restaurant which serves as a meeting place for the neighborhood. Breakfast ranges from one to two dollars. Lunch may go as high as four dollars.

This restaurant is also the chief political hangout in the state. Just down

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The demographic drift of America in recent years has been away from both the city and the country and toward small towns. When publisher Lance Tapley began raving to Ralph Nader about the blessings of his neighborhood's scale, Nader suggested he write it up for others to consider. Tapley's appraisal is right in line with the recommendation I'd affectionately give the small town of Athens, Georgia, where, without a doubt, I lived a better life than here on metropolitan wages. —*Kevin Kelly*

the street is the capitol building and the state office building. This is not, after all, a tiny village. It is the state capitol, Augusta, Maine, a small city of 22,000. Three blocks from my office are a couple of all-night restaurants. When I want to fly to Boston or New York, it is so easy it is shocking to my big-city friends. I simply walk to the airport, which is at the top of the hill above my office. I claim it is the only airport in the world that one can walk to from downtown.

When my business requires it, it is possible for me to leave the house a few minutes before seven and to be on State Street in Boston at eight-thirty. When I get home at six in the evening, I simply walk down the hill, enjoying the lovely view of the city snug in the Kennebec river valley. The Kennebec is a large river, and Augusta is the head of tide for the ocean. The river flows a few hundred yards from where I work and live. One can put in a boat at the municipal landing and, with a little luck, be catching striped bass in the very heart of downtown within a few minutes.

I am not writing this for the Augusta Chamber of Commerce. There are a number of small towns and cities where this kind of life still can be lived, although their number and quality are decreasing. I just want to show how anachronistic our life is. We have consciously chosen it to be so.

Much of contemporary American life, for many of the people who live it, is terribly counterproductive — a deterioration from the standards of living of the American past. My wife and I have recreated our childhood small-town environment of the 1940s and early 1950s, where one member of the family tended the kids, who walked to school and came home to lunch, and everybody knew the people around them. After living in urban environments — I lived in New York and San Francisco — we, like many young people in the 1970s, moved back to the country. But like many people who fled to a very rural environment in places such as Maine, we found ourselves, as kids came along, moving from the country back to a town. In this town, we discovered, it is still possible to escape urban problems while enjoying some urban amenities.

There is a literal price to be paid for this re-creation of the past, however: Money. You can't make much of it in Augusta, Maine. Of course, we spend less than in many urban areas. Big houses here sell for $50,000, and large, two-bedroom apartments rent for $300 per month. But we still live in the national economy. Food and other necessities such as gasoline, clothes, and health care are very expensive. When the cost of living is figured in, several studies have shown Maine to be the poorest state.

Our combined income is only about $25,000. This is with three kids and one on the way. We are not rich. If Peggy were to work full-time (assuming she could get a halfway-decent job, which is not guaranteed around here), I suppose our income would be $30-40,000. But we would rather budget carefully so she can stay home with the kids. I chose an office just around the corner, so I could spend time at home, too. It also seemed efficient in terms of eliminating wasted time driving — not to mention wasted gasoline and wear and tear on the cars.

Our idea has been to eliminate self-defeating activities, counter-productivities. To us, day care is counterproductive. Endless time running errands is counterproductive. Lengthy commuting is counterproductive. To us, living in a big city or suburb making a lot of money seemed counterproductive.

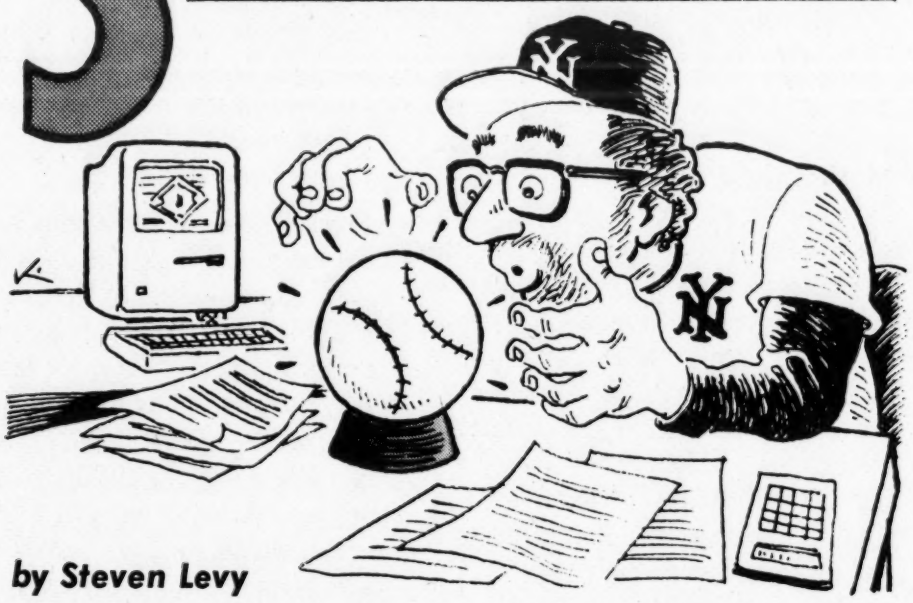
I resist the notion that our values can be quantified, but once for amusement I tried to figure out roughly how much money we were making if one put a price tag on some of the things we were getting for free. For example, the day care my wife gives our children amounts at least to the services of a full-time maid, which we'll arbitrarily set at a low price of $9,000 a year. In auto expenses alone I am probably saving $100 a week or $5,000 a year over a suburban lifestyle. Because of the low insurance premiums for everything in this part of the world, add a few thousand in savings there. What price no crime, clean air, and coming home for lunch? What price time saved from commuting? Am I really making a hundred thousand? The truth is, it can't be quantified. I don't care who you are; even if you have a private jet, you can't buy this modest life. ■

Within walking distance of the state capitol airport, the author's family seeks a lifestyle that shakes off the counterproductive "savings" of contemporary life.

27 GATE FIVE ROAD SAUSALITO CA 94965

SABREMETRICS:

A BASEBALL WAY OF KNOWLEDGE



by Steven Levy

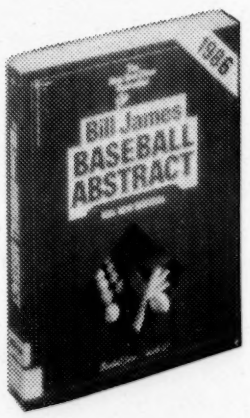
NOT FOR ONE MOMENT in my lifetime did I ever think it possible that I would become a major league baseball player. At age five, I booted my first ground ball and instantly realized my relationship with baseball would not be consummated physically. This did not prevent me from being thrilled to attend Phillies games, and throughout my adolecence I followed my home team passionately. A mournful *leitmotif* emerged: in tandem with my standard baggage of rebellion and confusion were the miserable performances of my home team whose batting and earned run averages I could quote by memory. Even then, there was a cabalistic comfort in translating the elegance (though the Phillies often did not meet the standards of that adjective) of the game to the equally impressive elegance of numbers. The numbers could even reach perfection, as they did in pitcher Jim Bunning's performance on Father's Day 1964: a breathtaking row of zeros, a perfect game. And they could toll disaster. I was 13, the Phillies were up by 6½ games with 12 to go — and they lost 10 in a row to lose the pennant by 1.

It was not long after that I lost touch with baseball. Went to college, did the sixties. Baseball, with its stately, conservative rhythms, seemed part of an establishment I wanted no part of. But like many in my generation, I found myself drawn back to baseball as the seventies wound down. The reasons go far beyond a yearning for continuity. In recent years a new way of following baseball has emerged, one which jibes perfectly with our information-rich culture. It's based on a study of the game beyond the game, a quasi-archeological approach that utilizes baseball's artifacts — the voluminous statistics produced by its players — and encourages their interpretation in order to more deeply understand and appreciate the actual contests on the field. I am totally hooked on this amateur calling, and so are a few million others.

This movement has a guru. His name is Bill James, and each year he produces a thick book called *The Baseball Abstract*, in which the previous baseball season is analyzed by a method James pioneered, which he calls "sabremetrics." James defines the term, derived from the name of an organization called the Society for American Baseball Research, as "the systematic, scientific study of baseball-related questions." His scholarship is often startling in that he will question near-sacrosanct tenets of the game (like the relative value of clutch hitters, or the degree to which the home stadium affects a team's performance) and marshall considerable statistical evidence — sometimes *inventing* new statistics that make use of raw data like times-caught-stealing, hit-by-pitch, ground-into-double-play, etc. — to demonstrate that the traditional wisdom, accepted in dugouts for generations, is rubbish. Other times he finds traditional wisdom pretty accurate.

While the appeal of James' work is pretty much limited to baseball fanatics, the style and breadth of his work is wide — he is a grandstand Socrates who uses logic and evidence to question assumptions, devise more solid theories, and devastate skeptics. By discarding preconceptions and approaching tradition-bound baseball with a scientific creativity (as well as a barbed colloquial wit), James lets you appreciate baseball as a living, complex system. Understanding James' sabremetric approach is indeed a baseball way of knowledge. No accident that besides baseball, James winds up addressing (by his own admission) "my dogs, my wife, my childhood, jazz music, talk show hosts, sharks, monkeys, teddy bears, and the nature of man and space."

After years of either disdaining him or ignoring him, *real* baseball people — managers and general managers and agents and even a ballplayer or two — are beginning to use some of James' approaches in evaluating player and team performance. A field of baseball scholarship has emerged to amplify the James approach. And a new audience of fans has become obsessed with baseball statistics, I among them. Publications have learned to cater to us — most notably *USA Today*, which makes a point of printing complete box scores daily (even for late-ending West Coast games), and each player's stats on a weekly basis. □



The Bill James Baseball Abstract
Bill James
1986; 340 pp.
$8.95
($9.95 postpaid) from:
Ballentine Books
Random House
400 Hahn Road
Westminster, MD 21157
or Whole Earth Access

The Hidden Game of Baseball

This book has more hard-core statistical mastication than James' efforts, and the style is not as breezy, but interested sabrematicians will find the effort worthwhile. The thrust here is to push some new, fairly complex stats that supposedly give us a worthy method to compare ballplayers, even those who played in different eras. Thus the past becomes tangible. —SL

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What we have with the new statistics is simplicity arising from complexity, while what we have had for the last hundred years or so has been complexity as a product of simplicity. We had the aura of simplicity, but in fact we were using statistics — such as the BA, the RBI, the W-L Pct. — so fraught with bias, so antithetical to the nature of the game, so demanding of special knowledge about historical context — that they were in reality highly complicated. If you compare Ty Cobb's .382 batting average of 1910 with Ted Williams's .388 batting average of 1957, the difference appears to be six thousandths (six "percentage points"). To find out the true difference without benefit of a new statistical approach would involve you in a series of fairly convoluted assumptions if not serpentine computations.

•

The computer has reversed the thought process represented by traditional baseball statistics, and the new statisticians, rather than wrapping the game in layer upon layer of newfound complexity, are peeling the existing layers away.

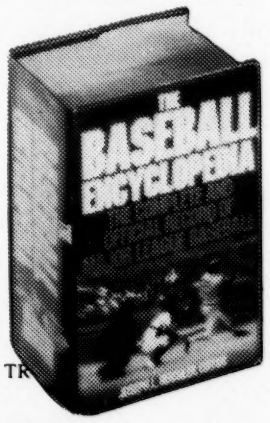
The Hidden Game of Baseball
John Thorn
and Pete Palmer
1985; 419 pp.
$10.95
postpaid from:
Doubleday and Company
Direct Mail Order
501 Franklin Avenue
Garden City, NY 11530
or Whole Earth Access

The Baseball Encyclopedia

The ultimate baseball reference. James calls it "Big Mac"; indeed, it weighs about a ton. Included is the complete record of every human who played major league ball, ever. To well-trained eyes, the statistical summaries pack the power and poignancy of world-class short stories. Depending on the player's career, the stories could be those of F. Scott Fitzgerald, John Updike, Harlan Ellison, or Richard Wright.

Every so often you hear about the Mormons compiling a universal genealogy—the family tree of everyone on Earth. They keep the computer disks in a big mountain somewhere, so that the genealogy won't get wiped out in a nuclear war. In the world of baseball, Big Mac is the same thing and more, the genetic code of past and present. I hope the Mormons have a copy of it in their mountain. —SL

The Baseball Encyclopedia
Joseph L. Reichler
1985; 2400 pp.
$38.41
postpaid from:
Macmillan Publishing Co.
Front and Brown Streets
Riverside, NJ 08075
or Whole Earth Access



Richie Allen

ALLEN, RICHARD ANTHONY BR TR
Brother of Hank Allen. Brother of Ron Allen.
B. Mar. 8, 1942, Wampum, Pa.

1963	PHI	N	10	24	7	2	1	0	0.0	6	2	0	5	0	.292	.458	2	0	OF-7, 3B-1
1964			162	632	201	38	**13**	29	4.6	**125**	91	67	**138**	3	.318	.557	0	0	3B-162
1965			161	619	187	31	14	20	3.2	93	85	74	**150**	15	.302	.494	1	0	3B-160, SS-2
1966			141	524	166	25	10	40	**7.6**	112	110	68	136	10	.317	**.632**	4	1	3B-91, OF-47
1967			122	463	142	31	10	23	5.0	89	77	75	117	20	.307	.566	1	0	3B-121, SS-1, 2B-1
1968			152	521	137	17	9	33	6.3	87	90	74	161	7	.263	.520	8	0	OF-139, 3B-10
1969			118	438	126	23	3	32	7.3	79	89	64	144	9	.288	.573	1	1	1B-117
1970	STL	N	122	459	128	17	5	34	7.4	88	101	71	118	5	.279	.560	3	1	1B-79, 3B-38, OF-3
1971	LA	N	155	549	162	24	1	23	4.2	82	90	93	113	8	.295	.468	3	0	3B-67, OF-60, 1B-28
1972	CHI	A	148	506	156	28	5	**37**	**7.3**	90	**113**	**99**	126	19	.308	**.603**	7	1	1B-143, 3B-2
1973			72	250	79	20	3	16	6.4	39	41	33	51	7	.316	.612	3	0	1B-67, 2B-2, DH
1974			128	462	139	23	1	**32**	**6.9**	84	88	57	89	7	.301	**.563**	4	0	1B-125, 2B-1, DH
1975	PHI	N	119	416	97	21	3	12	2.9	54	62	58	109	11	.233	.385	5	0	1B-113
1976			85	298	80	16	1	15	5.0	52	49	37	63	11	.268	.480	2	1	1B-85
1977	OAK	A	54	171	41	4	0	5	2.9	19	31	24	36	1	.240	.351	2	0	1B-50, DH
15 yrs.			1749	6332	1848	320	79	351	5.5	1099	1119	894	1556	133	.292	.534	46	5	1B-807, 3B-652, OF-256, 2B-4, SS-3
													8th					
LEAGUE CHAMPIONSHIP SERIES																			
1 yr.			3	9	2	0	0	0	0.0	1	0	3	2	0	.222	.222	0	0	1B-3

Footsie Blair

BLAIR, CLARENCE VICK BL TR 6'1" 180 lbs.
B. July 13, 1903, Pryor, Okla.

1929	CHI	N	26	72	23	5	0	1	1.4	10	8	3	4	1	.319	.431	3	2	3B-8, 1B-7, 2B-2
1930			134	578	158	24	12	6	1.0	97	59	20	58	9	.273	.388	6	1	2B-115, 3B-13
1931			86	240	62	19	5	2	0.8	31	29	14	26	1	.258	.404	16	2	2B-44, 1B-23, 3B-1
3 yrs.			246	890	243	48	17	9	1.0	138	96	37	88	11	.273	.396	25	5	2B-161, 1B-30, 3B-22
WORLD SERIES																			
1 yr.			1	1	0	0	0	0	0.0	0	0	0	0	0	.000	.000	1	0	

Richie Allen
A hell of a tale hangs here. Note the progress from a brief September tryout, to a Rookie-of-the-Year season (1964) to a Hall-of-Fame-caliber season (.317 BA, 40 hr, 110 rbi) in 1966. Still, there are unsettling harbingers of disaster, like the league-leading strikeouts (signified by boldface) in '64 and '65, and trouble fielding his third-base position (he played a third of his games in the outfield that year). Sure enough, trouble struck in an injury-shortened 1967, and then two years where he seemed to have changed from an all-around ball player (high average, stolen bases and power) to a pure power hitter (good home runs, lower average, high strikeouts). That he was a "problem" player is apparent from his journeys in the early '70s — four teams in four years. Only with the White Sox did he achieve his last hurrah — an MVP season in 1972. It seems bittersweet, compared to his earlier promise.

Footsie Blair
Diary of a brief period in the sun — at age 26, undoubtedly after toiling long years in the bush leagues, tall and skinny utility man Blair makes the bigs, and hits well enough to win the second-base job in 1930, performing quite creditably (scored 97 times, a lot of those probably due to Hack Wilson's record 190-rbi year). But in 1931 he was back in a part-time role, and thereafter drops off the face of the Earth. His grandchildren probably hear a lot about Wrigley Field in 1930. Another stray thought: why does a guy with 11 steals in three years get nicknamed "Footsie"? Possible answer: it's better than Clarence. —SL

APBA Major League Baseball

APBA MAJOR LEAGUE BASEBALL. Copy-protected; $89.95. IBM PC and compatibles. APBA Game Company, 1001 Millersville Road, P. O. Box 4547, Lancaster, PA 17604. (Card games also available from APBA Game Company: basic game, $28.95; Master game, $21.95; 1986 edition of player cards, $17.95.)

Predating the Sabremetric revolution were a number of statistics-based board games that allowed someone to replay entire major league seasons, game by game, on a kitchen table. The characteristics of real-life baseball players are embodied by a series of numbers on playing cards the size of a poker deck. Rolling the dice to determine which number to access, and decoding the number from a set of charts, the players, in theory, perform like their real-life counterparts. It works — hundreds of people spend hundreds of hours recreating baseball seasons (most often the previous year, but you can buy cards to replay, say, the National League in 1951). All the decisions that managers make, you make. The games, like most, are more fun when two people play head-to-head.

My favorite of this genre is APBA, invented over thirty years ago by an affable entrepreneur in Lancaster, Pennsylvania. The "Basic Game" is perfect for beginners, and comes with cards to play games from last year's season. Each year, when the new season's cards come out, hundreds of APBA owners flock like pilgrims to Lancaster to buy the cards. More experienced baseball people buy the APBA "Master Game," which has additional ratings for players — everything from strength of an outfielder's throwing arm to a pitcher's propensity to hit batsmen. A computer version is available for IBM and compatibles.

—SL

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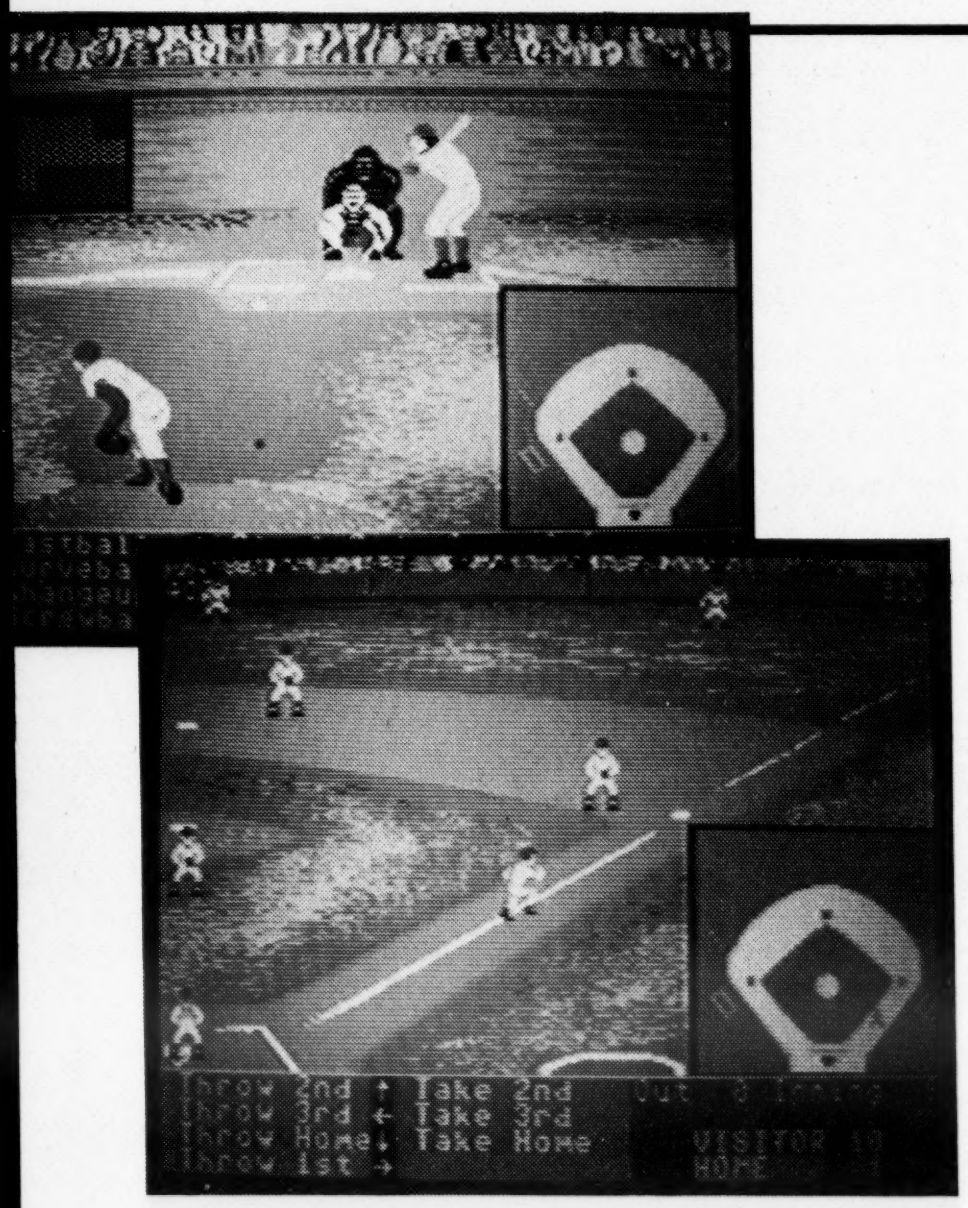
This card represents a year in the life of Greg Luzinski. The first set of numbers (before the hyphens) represent the results of a roll of two dice of different colors. (A red-die "1" and a white-die "6" is read as "16." The number to the right of the hyphen is a reference to a play result recorded on one of a series of charts. So if the dice roll yields two sixes — a 66 — you look up the number "1" on the charts and find a home run. Note the preponderance of "13"s on the card — that translates to strikeouts. Bull whiffed a lot that season.

Bats: Right **Throws:** Right
Height: 6-1 **Weight:** 225
Born: 11-22-50 Chicago, Illinois

Gregory Michael
"Bull"
LUZINSKI
(S) Outfielder (1)

11- 5	31- 14	51- 14
12- 25	32- 26	52- 27
13- 14	33- 6	53- 15
14- 30	34- 31	54- 32
15- 10	35- 14	55- 9
16- 28	36- 33	56- 34
21- 13	41- 13	61- 40
22- 8	42- 22	62- 13
23- 30	43- 29	63- 35
24- 13	44- 8	64- 13
25- 9	45- 14	65- 12
26- 13	46- 13	66- 1

J-3



Hardball

HARDBALL. Copy-protected. $29.95 (Commodore 64 and 128); $34.95 (Apple). Accolade, 20833 Stevens Creek Boulevard, Cupertino, CA 95014.

Not really part of the sabremetric movement is the best two-player computer baseball game I've seen, HARDBALL. It gives its diamond gladiators made-up names and statistics, so you can't identify them with real-life counterparts. But it does allow you the arcade-style thrills of controlling pitches and hitting against them — the conflict is more batter vs. pitcher than managerial (though you can make line-up changes and other managerial decisions). One problem — a couple pitchers here have nearly unhittable screwballs that make them more effective than Dwight Gooden. —SL

Microleague

MICROLEAGUE. Copy-protected. $39.95. Apple II, Commodore 64/128, Atari 800, IBM PC/PCjr. Microleague Sports Association, 2201 Drummond Plaza, Newark, DL 19711.

MICROLEAGUE is a sweet little computer game for replays of seasons. Not as detailed as APBA, but it costs a bit less and runs on more machines. Also, the graphics are better than its close competitor COMPUTER BASEBALL (See ***WESC*** *2.0, p. 39). The computer "manager" you can play against (called "The Baseball Buddha") is pretty canny and will even replace a relief pitcher to get a righty-lefty advantage. The games are short, and if you get the disk with the player ratings for last year, you can find out, for instance, if 1985's Cleveland Indians might have done better if you were at the helm. —SL*

Rotisserie League Baseball

Perhaps the weirdest outgrowth of baseball statistics-mania has been the emergence of what are called Rotisserie Leagues. Named after a restaurant where some guys cooked up the idea for this, these leagues consist of ten or twelve "team owners" who get together at the beginning of a baseball season and divvy up the major leagues (usually limiting themselves to either American or National) so that they have created their own, imaginary teams of real players playing for the actual teams. (For instance, I am in one of these leagues, and my 23-man team, the Hackers, includes Kirk Gibson of the Tigers and Cal Ripken of the Orioles.) You buy into the league with real money.

The statistics that the players compile during the season accrue to our imaginary teams. Eight statistical categories are used — batting average, homers, rbi's, and stolen bases for field players; wins, saves, earn run average, and the ratio of walks and hits allowed to innings pitched for pitchers. At the end of the year, the franchise with the best total statistics wins; there's a big pool of money that goes to the top teams.

Since its conceptualization six years ago, Rotisserie League Baseball has grown to literally hundreds of leagues, and all of them take it very seriously. Weeks before the draft, everyone begins to study in order to evaluate the best players and decide which players from the previous season should be "frozen" on your roster. The draft itself is rife with tension — I can only compare the feeling to the way I felt as a high school junior, a "college hopeful" taking the SAT. After the draft, the phone rings at all hours of the night with rival owners proposing trades. Every morning, I rise to read the box scores so I can see how the Hackers performed. When baseball season ends, mornings just aren't the same.

Being in one of those leagues is a lesson in the power of information. We find it essential to know obscure data like how many bases a rookie outfielder named Rick Cangelosi stole in the minor leagues, and have learned where to find it. (See ***Baseball America****, reviewed below.) Those of us with computers will often access CompuServe, where under the section provided by the St. Louis Post Dispatch, all the AP wire baseball stories — more than any newspaper ever runs — are carried. But often, our needs cannot be served by standard media, and information is thereby more costly. In my league, The American Dreams, at least half the owners take Florida vacations during spring training so that they can look over the rookie crop and see for themselves which players look promising enough to pick in our annual draft. Some of our franchise owners have struck up friendships with the general managers of real teams, calling them often for inside dope on which pitcher has the inside track for a short relief job, or news of when a third baseman might be taken off the disabled list. That information has real value to them.*

Being in a Rotisserie League is an immersion into fanaticism, the sabremetric urge run amok, but it adds a dimension to warm-weather months that I wouldn't trade for anything. Even though my team finished in the cellar last year.

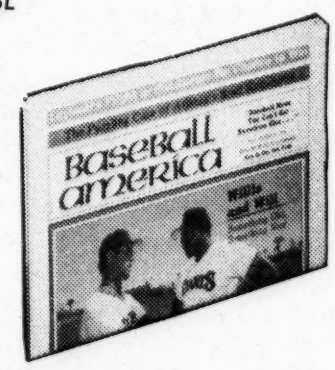
All the information one needs to start one of these leagues, plus a lot of glibly written filler, is in the book. It gives you a taste of the sport, some clues to strategy, and the rules of the game. —SL

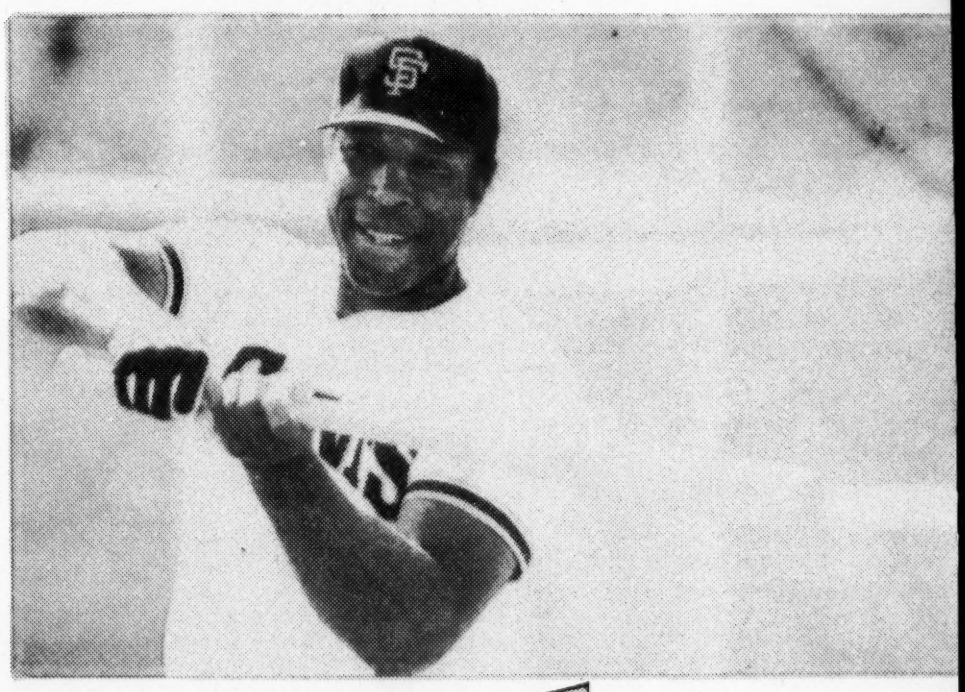
Rotisserie League Baseball
Glen Waggoner, Editor
1984; 211 pp.
$5.95
($7.45 postpaid) from:
Bantam Books
414 East Golf Road
Des Plaines, IL 60016
or Whole Earth Access

Baseball America

More entertaining than ***The Sporting News*** *(which has too much non-baseball stuff), this upstart tabloid is subtly shifting focus from the minor leagues to baseball at all levels. The best coverage of up-and-coming players, and some provocative columnists. —SL*

Baseball America
Allan Simpson, Editor
$24.95/year
(18 issues) from:
Baseball America
P. O. Box 2089
Durham, NC 27702





Hall of Famer Willie McCovey has been a welcome presence in the camp of the San Francisco Giants this spring. Not only has he given the Giants a link to their past, but he has been showing rookie flash Will Clark a thing or two about playing first base.

Major League Monthly

A Macintosh-generated newsletter done by a New York baseball fan named Eliot Cohen. Its 14 pages provide an opinionated evaluation of major league transactions and player performances. Every March, there's a well-informed book review issue, which rates the spring crop of baseball literature. Cohen has started to integrate information geared to Rotisserie League owners. —SL

Major League Monthly
Eliot Cohen, Editor
$14.95/year
(12 issues) from:
Major League Monthly
P. O. Box 355
Jamaica, NY 11415 ■

What's New With You?

by David Greenberger

William "Fergie" Ferguson (1905-1984).

When David Greenberger was activities director of the Duplex Nursing Home in Jamaica Plain, Massachusetts, he started a monthly magazine for the residents featuring their own words and pictures. Much of the content is recorded/transcribed chats about common things and answers to questions posed by Greenberger — often weird questions like what kind of sound do clams make, or, which came first, coffee or tea? Just getting them to answer odd questions indicates the bond of trust between the Duplexers and Greenberger.

No longer employed by the nursing home, Greenberger retains his ties with the residents and is continuing to publish The Duplex Planet *on his own. Subscriptions are $1 per issue; minimum order, six issues. Back issues are also available from David Greenberger, P. O. Box 1230, Saratoga Springs, NY 12866.* —*Robert Horvitz*

What's new?

William "Fergie" Ferguson: Oh, just makin' things over. Do the best we can.

Making what over?

Fergie: The whole works.

Such as?

Fergie: EVERYTHING! Morning, noon and night. And all night.

Twenty-four hours a day.

Fergie: Twenty-four hours a day.

What's being done?

Fergie: We're making the grounds and everything over so our friendship will continue.

A noble undertaking.

Fergie: N-o-b-l-e!

Noble.

Fergie: (Nods).

What can you tell me about the behavior of fish?

William "Fergie" Ferguson: The behavior of fish is like any other creature, they have their ups and downs. Some are faster than others, but that doesn't always make them win you know, just because they're faster. They might be faster in one direction, but it might not be the right direction.

They are very, very careful that they do not make any mistakes. Of course, they make mistakes like anyone, but they try not to. But they make a mistake just the same. Different kinds of mistakes, too many to mention.

Ed Poindexter: A fish has no, ah, no feet. That's all I know.

John Fallon: They're wild.

Larry Green: They eat worms.

Harry Katz: They're orderly.

Frank Wisnewski: I eat fish, I don't want to know about their behavior.

George Stingel: Oh, I wouldn't know. When they swim upstream they nest their eggs, all right Dave? Salmon does.

Waldo Friesz: There's no behavior on fish.

Ed Andrszweski: I got to think it over . . . well, they're very quiet, they do a lot of swimmin' and they catch minnows, the small ones, is that true or not?

Andy Legrice: They're always spawnin', always makin' whoopee. That's why there's so many of 'em, that's all they do. It's good sport, fishin.'

Walter Kieran: Well, they're lively when they're in the water, but when you take them out they're dead.

Walter McGeorge: Fish behavior? All I can say is fish must be very observant because they must notice the way you bait your hook — if one little bit of the hook is showin', they won't bite it.

Ed Rogers: Some of them, they ah, you know, stay in the water, swim. Some jump out of the water, they jump, yeah, jump around in the water. They do like a somersault and all that. They run around in the water.

David Brewer: They swim, that's all I can say.

Bill Lagasse: I don't know, I only eat them, I don't work on fish.

Bill Sears: They swim in the deep water, in the sea. They, ah, eat small fish. That's all I know.

Gil Greene: They have no sex life.

John Fay: I don't like fish, I always get hamburger.

When will hell freeze over?

John Fallon: Never.

Bernie Reagan: I don't think it ever will, it's a fiery pittance.

Larry Green: Damned if I know.

Walter Kieran: When the Lord says so.

Ed Poindexter: I don't know, when do you want it? Can I have a cigarette?

"Fergie" Ferguson: That's a hell of a question. Not that it hasn't got sense and merits, but it just seems an inopportune time to be asking such a strict question. And it IS strict.

John Lowthers: Why, I think it will never freeze over.

Abe Surgecoff: Well, I want to tell you something they had in Japan, a volcano — it exploded, and thousands of people running around and trying to find a suitable place. These people were out of eating bread, completely out. They had to leave some bundles behind. The old-timers couldn't run, but they walked — real fast, couldn't run fast. And, ah, these people, they were fighting for this dormitory — Chinese and Japanese fighting for survival. When hell freezes over is when they can get their bread and bundles back again, from the small independent stores.

Walter McGeorge: At the end of time.

Bill Lagasse: I don't know. *(laughs)* I don't know that. Where is it? You're educated, you should know where hell is. I don't know. I hope I don't end up there.

Harry Katz: When it's too cold to live.

Francis McElroy: It'll never freeze over. Hell'll always be hell. And hell is where the wicked are condemned.

Bill Niemi: Well I doubt hell'll freeze over, because people who say that or have that kind of personality or do the kind of things they do to earn their keep — it's probably something bad they do — that's where they'll end up, in that region.

Frank Kanslasky: When I get there.

Frank Wisnewski: I don't know *(laughs)*, when heaven opens up I guess.

Tell me something important to write down.

Francis McElroy: To love, honor and obey everyone, and to help everyone.

Andy Legrice: Stay home.

Bill Niemi: Always mind your manners and help those who are less fortunate.

Andy Legrice: Make friends with everybody.

John Lowthers: Why, ah, I'd say the next meal, I guess.

"Fergie" Ferguson: Chop suey sandwiches.

John Fay: The weather, changeable every time.

Abe Surgecoff: About the individual, how he gets along.

Bill Sears: The movin' picture we took the other day over in the room there, that was important.

Ed Rogers: You mean like going to the movies or something like that? Watching a movie, that's important.

Harry Katz: It's a great day!

Walter McGeorge: I wish I had a cigarette.

Larry Green: Happy New Year! What day is today?

Friday.

Oh. Joe Lewis — my uncle.

Ed Poindexter: Cookies, bananas and milk.

Are you for or against gravity?

Francis McElroy: I'm, ah, for it.

Fergie: I'm WITH gravity.

Andy Legrice: For. If you didn't have it you'd be flyin' in space. Weight holds you down, grounded.

Bernie Reagan: Gravity? Well gravity is something that exists for everybody — objects, people. Gravity. You take a thing and drop it and see how long it takes to fall.

George Stingel: Well, ah, I'd be against it because you could fall and get hurt.

Abe Surgecoff: I'm for gravity, if you haven't got the gravity the air or oxygen would expire and a lot of people would die.

Ed Andrszweski: What do you mean by "gravity"?

Bill Lagasse: The moon wouldn't stay up there if it wasn't for gravity.

Graphic by Ken Eglin (1915-1984).

What do you have to do to get a cloud named after you?

Charles Shay: Get drunk.

William "Fergie" Ferguson: Speak to Jesus Christ.

Andy Legrice: Make a vacuum.

Frank Kanslasky: I s'pose if you died, then they'd name it after you.

Francis McElroy: You pray for sunshine.

John Fay: Wait till the rain comes.

Jim Thibedeau: I don't know, unless you jump with a parachute.

George Stingel: There's a song, "Little White Cloud That Cried" — Johnny Ray used to sing it.

Harry Katz: Be in the sky.

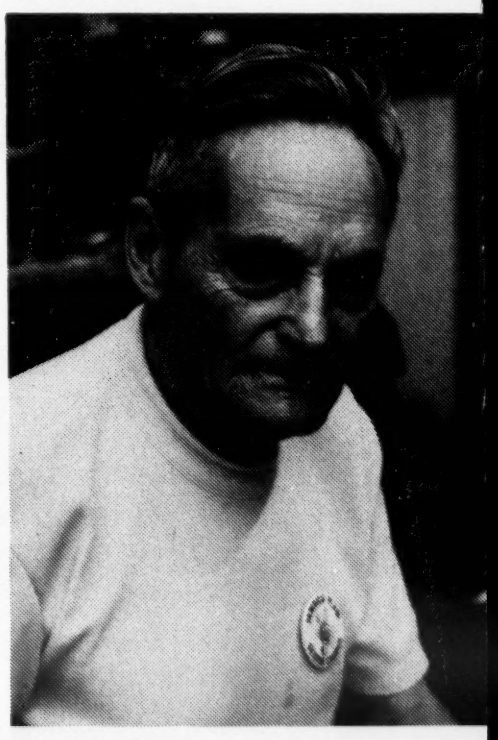
Bill Niemi: Well you probably have to get elevated to sainthood. There's a Saint Cloud, Minnesota, isn't there?

Ernie Brookings: You'd have to do something of national importance.

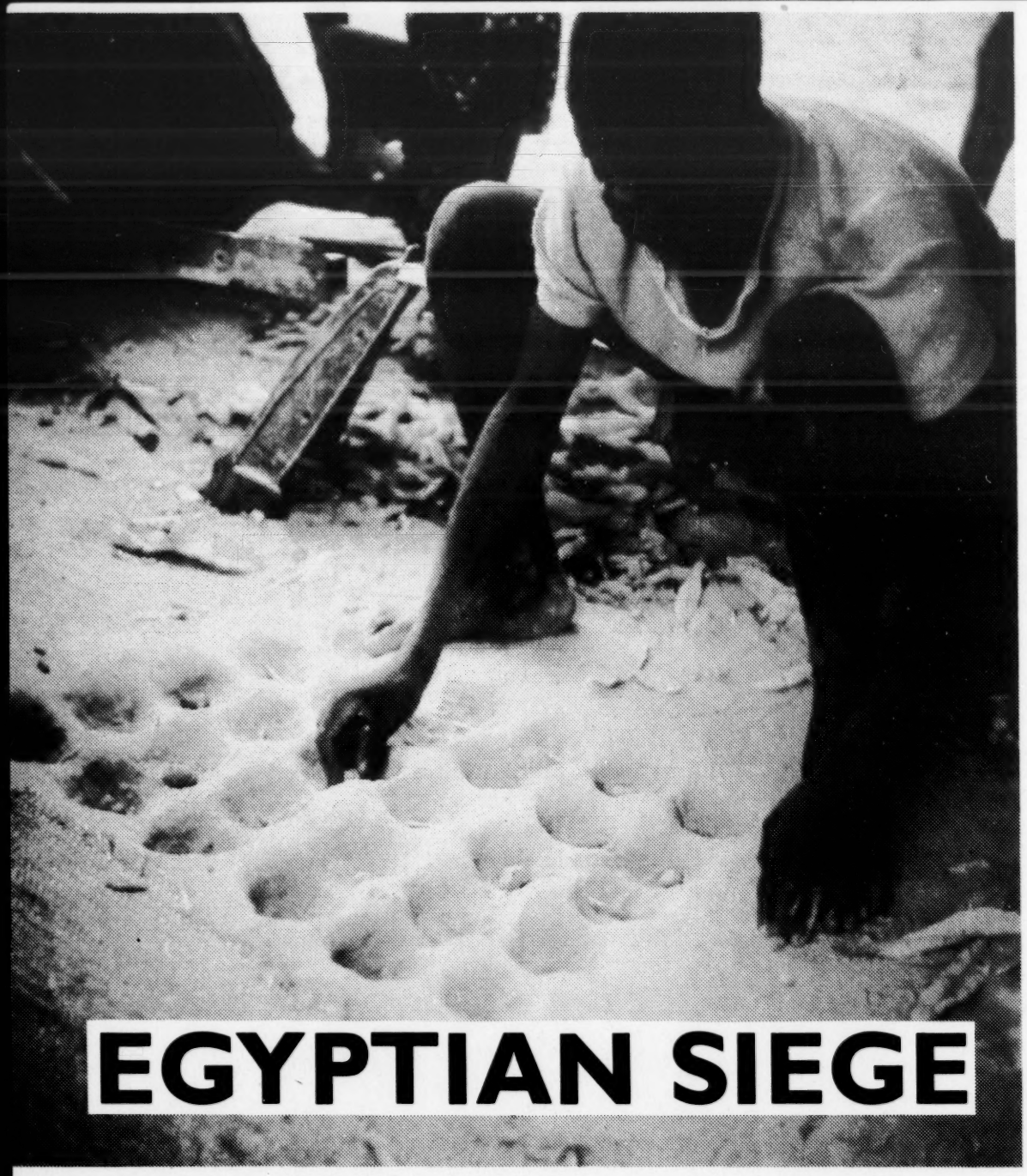
Francis McElroy: Get wacky, get mentally deranged.

Larry Green: Damned if I know.

Jack Mudurian: Be an Indian. ■



Ernest "Ernie" Noyes Brookings.



EGYPTIAN SIEGE

The game of Siege goes by a different name in West Africa — Yote. The rules and setting are similar to this contest, taking place in Upper Volta.

by Philip Stewart

THINK OF A BOARD GAME, and you will probably see images of yourself cooped up indoors on a wet day or a long winter evening, or perhaps sitting in a great hall taking part in a chess tournament. Nothing could be further from being out of doors feeling the wind or the sun's warmth, looking at soil and rocks and plants. Well, let me share with you the secret of *seega* or Egyptian siege, a board game that fits so well into its outdoor setting that it seems almost a part of nature.

Siege combines the simplicity of checkers with the infinite variety of chess or go, the slowly unfolding geometry of go with the rapid cut and thrust of chess or checkers. In addition, it has an aesthetic appeal all its own. But if Siege is so good, why have so few people heard of it?

I first met the word "seega" in an Egyptian novel I was translating. My dictionary gave no help, so I asked my Cairo friends. They were learned people — university teachers and students, lawyers and doctors — but most of them did not even know the game. One friend, though, was able to tell me that it was "a childish game, played by peasants, not interesting at all." I felt uneasy, but got no further.

Having finished my translation, I left the noise of Cairo for a holiday in Uper Egypt. Staying in a village near Luxor, I at last found men playing *seeja* (the Upper Egyptian pronunciation, from which I have called it "siege" in English). I understood at once why my Cairo friends despised the game: they were too grand to sit down in the dust and move pebbles around. Worse still, if they had stooped to playing, they would have been soundly beaten; these villagers were highly skilled. They trounced me every time I tried my hand. I soon came to realize that this game was as difficult as chess. The "simple peasants" had mastered something as intellectually demanding as anything in the university curriculum of my Cairo friends.

The game is played on a board of 25 stations, five by five. On sand or soft earth the stations are little hollows, pressed with the knuckles. On hard ground, they are the intersections of two sets of five lines, scratched at right angles. On a surface too hard or rough to mark, they are the squares formed by two sets of six twigs or grass stems, laid at right angles. Each player has twelve pieces. These can be of any two contrasting materials: lumps of grey and red schist, knobs of flint and limestone, water-worn pebbles of different colours . . . it could, for that matter, be played with fruits or nuts, bones or shells, even snowballs and icicles. Part of the beauty of the game is its reflection of the physical scene.

The game takes place in two phases. First, the players take turns setting out their pieces, two at a time, till all the stations except the central one are filled. In the second phase, the players take turns moving their pieces, starting with the player who set his pieces down last. (As each player has the first turn in one phase of the game, neither has the heavy advantage of the white pieces in chess.) A move consists of moving a piece to an adjacent square, horizontally or vertically (not diagonally). Pieces may move

backward as well as forward, so the board does not have two ends as in chess and checkers. If a player is unable to move when it is his or her turn, the game ends in stalemate.

The object is to take as many of the opponent's pieces as possible, and the game is won when one player succeeds in reducing the other to only one piece. Taking — which is optional, not obligatory — is effected by moving one of your pieces so that a single enemy piece is caught between it and another piece of yours (horizontally or vertically, not diagonally); the enemy piece is then removed from the board. Two or three pieces, on two or three sides of the station you move to, can be taken simultaneously with one move. If the piece that has just taken can take again, it is allowed, but not obliged, to do so straight away, before the opponent's turn, making as many moves as there are successive takes to be made. (Pieces that are caught between two enemy pieces during the setting out are not thereby taken.)

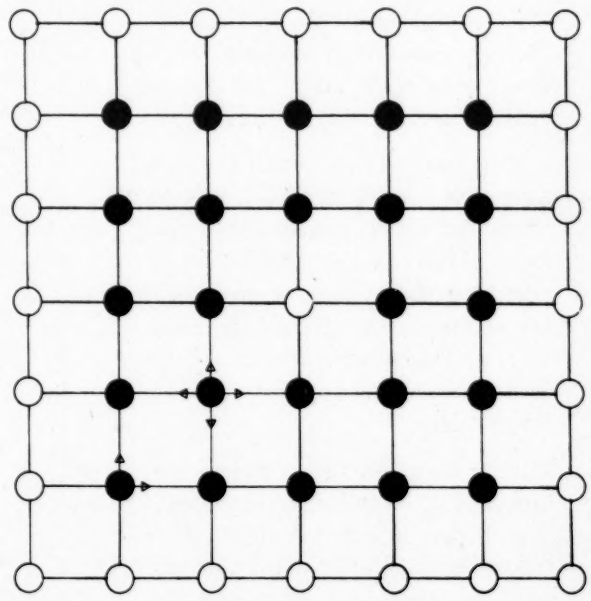
These are all the rules of siege, and they can be learned in a few minutes. But the simplicity is deceptive. There are hundreds of thousands of viable starting positions (not leading to immediate stalemate), after allowance has been made for those that are rotations or mirror images of each other, as opposed to only one starting position in chess or checkers. Out of each starting position the branching tree of alternative moves grows very rapidly as captures increase the number of empty spaces into which moves can be made. The number of possible games must far exceed the number that have ever been played.

As in chess, the experienced player visualises the board and his position as a whole, judging it by certain broad features. In one way this is even harder in siege than in chess, since the board does not have a black end and a white end, a king's side and a queen's side. Position must be recognized from any angle. Great variety exists in the extent to which each army is gathered together or divided, and in the shapes of the groups of pieces and in the gaps between them. There are closed games in which two armies press on each other, trying to force losing moves, and open games with rapid change over a wide front. Surprises come the moment attention lapses — not least the surprise of sudden stalemate just when one player seems poised to overwhelm.

Once you have mastered siege — if you ever do — you can progress to double siege, played by the same rules but with twice as many pieces on a board of 49 stations, seven by seven. Here the number of opening positions is on the order of a trillion — more than the number of cells in the human brain. Egyptian villagers assured me that it was possible to go even further and play on a board nine by nine, but I think they were only teasing, though in theory there is of course an infinite number of possible siege boards.

There seems no way of knowing how old the game is. Played on the ground with pieces of rock, it has left no apparent archaeological trace. Linguistic evidence suggests that it predates Arab cultural imperialism in Egypt; there is no convincing Arabic etymology for *seega*. I am convinced that the game is very ancient and perhaps was played in the shadow of the rising pyramids. If the perfection of a game is measured by the relation between the simplicity of the means and the variety and complexity, then siege has been perfected to a degree that suggests a long evolution.

Of course, it is possible to bring siege indoors and lift it onto the table. For the millions of people who do not live close to nature this is no doubt the form in which the game is most likely to spread. The best layout is suggested below; the board can be used for either simple or double siege, with the extra stations marked with open circles to distinguish them. The centre circle is also open as a reminder to leave it empty during the setting out. The lines connecting the stations indicate the direction of moves. Siege can also be played with one (or two) sets of checkers pieces on 25 (or 49) squares of a checkers board. Siege could and should be translated into the language of the computer.



A board for siege and double siege.

A few extra conventions are needed for the game to become standardized. It would be convenient to call the sides "black" and "white," whatever their actual colour, and to agree, say, that black sets out first and white moves first. A simple notation is suggested above, and used in the sample game given below. For match play it would also be necessary to add regulations about the touching of pieces without moving them, the taking back of moves, the correcting of wrong moves, and so on. Time control might also be required.

For me the true siege is still the outdoor game, played on a makeshift board with whatever pieces come to hand — a perfect symbol of the natural roots of human thought. ■

27 GATE FIVE ROAD SAUSALITO CA 94965

BACKSCATTER

Echoes from readers back to the *Whole Earth Review* (27 Gate Five Road, Sausalito, California 94965)

Robin Hood wages

I am an acupuncturist and massage therapist. I practice in Cambridge, MA, specializing in sports injuries, chronic pain and rehabilitation. Besides my private practice, I also teach and write.

I have a very unique and workable fee system. I use a client-determined sliding scale. Two deeply held beliefs have guided the evolution of this practice.

My work is my spiritual path. No ifs-ands-or-buts about it. It's nothing that I vocalize or share. Yet it is the guiding force behind my healing.

I firmly believe that health care is a right, not a privilege. No one should be denied access to adequate health care. While there is a business side to practicing medicine, it is really service unto others. Period. Medical knowledge and skills are not a commodity to be wheeled and dealed in the marketplace.

When new clients ask me what my fees are, I give them my Standard Rap: "I have a sliding scale. My fees range from $25-40 — you pick the price. It's elastic on either end. You know what's best and most comfortable for you. Everyone gets the same treatment (since you don't pay me until after I treat you)."

I have run my practice like this for two years. I earn the same as other acupuncturists in Boston. My average fee matches the market at large. I'm not losing anything by not maintaining a set fee. And it allows me to treat a wide and diverse community: lawyers, dancers, doctors, clericals, students, and the unemployed.

Since most people aren't paying the bottom of the scale, I think my clients are being open and honest with me in return. Anyone who can look me in the eye and tell me that $10 is all they can honestly afford is bound to be telling the truth. And yes, there are those who pay more than $40. And remember the whole structure is purely voluntary. I never turn anyone down. It's truly a win-win situation.

Thanks to my father for convincing me to have no set fees in order for me to live out my Robin Hood ethics.

—Jerry Whiting
Brighton, Massachusetts

Two more urban legends

Heard this at a party the other night.

A woman leaves an assertiveness training session to do some shopping. Later, loaded down with "buys," she goes into a diner for a cup of coffee. She stops enroute to pick up a Kit Kat bar. After getting some coffee, she places her bundles aside and sits down to snack. A young man sits across from her. Kit Kat bar on table, she reaches across and takes one segment. He reaches for 2nd segment. Startled, she says nothing but reaches for a third. To her surprise he takes the last. She sits shocked, figuring what to do; and if nothing how to tell the women at next week's assertiveness training group. Meanwhile man gets up to get a danish. Returning to table he places it down. She, having recovered, reaches over and bites *big* into danish. Gathering her bags she exits. Reaching the parking lot, rummaging through her pocketbook for her keys, she is once again shocked, to find, what else, but *her* Kit Kat bar.

—Gayle Raskin
NYC, New York

This one reached a fish camp on the Yukon River, Alaska.

A man converts the extra gas tank of his Winnebago to a septic tank and inevitably some young kids try to syphon the gas out of the tank — sucking of course on the syphon hose to get the gas flowing while Winnebago owner laughs. . .

—Vernet
Alaska

Oriental electric brain food

"Computer" in Cantonese translates literally as "electric brain."

Hong Kong not only makes a sizeable portion of electric brains and electric brain supplies for the rest of the world but also hawks them locally with special style.

Most of the territory's modern skyscrapers sport at least one computer store; many have one per floor.

However, the crowded, working class neighborhood, Shum Shui Po, tucks away the best suppliers, a miscellaneous collection of over fifty small computer stores mixed in between dozens of other commercial ventures, from clothing to fast food, in the Golden Shopping Center.

In the Golden Shopping Center, perhaps the largest computer shopping center in the world, dozens of foreign visitors dicker elbow to elbow with the hundreds of the local Chinese who crowd in from early morning till late at night.

The Center poignantly contrasts with its surroundings. Recently, as I left the Center with a new Juki printer, I saw among the usual hordes of street vendors one drawing an exceptionally large crowd. I edged among the spectators.

In front of them, in a small dusty space, one of a team of three men slit a live snake its full seven-foot length. Then, with a huge smile and only the hint of a wink, the butcher, about 23 and in skimpy shorts, brought the snake's head inside his mouth, raised an arm's length of the snake's body, and drank the raw blood which oozed down the new canal he'd carved. That's salesmanship! People paid big prices for the rest of the blood, which they consider, like the snake's bile, a strong aphrodisiac. The flesh itself also brought big dollars . . .

I went half-way and drank some snake's blood in a special soup at the University staff club. I had fresh Apple IIe [a cheap pirated variety called "Rotten Apple"] for dessert, before I fed this to my electric brain.

—Li Min Hua
Hong Kong

An interest in Islamic banking

In Micha Weinman's article "An Economy Without Interest" (*WER* #49, p. 25), it was suggested that "as the world sinks more and more into interest-created debt, it is not too farfetched to suggest that non-Muslims may find something to learn from Islamic principles of wealth."

The January 1986 issue of *Acres, U.S.A.* reported that some Georgia farmers have already presented this request to their Governor: "Call a special session of the Georgia Legislature to enact legislation establishing a state Arab-type interest-free bank so that the farmers will not lose their farms and business owners will not lose their businesses."

—John McDonnell
Gladstone, Missouri

Success built on farting

If you recall, *CQ* coined me "one of the world's leading authorities on farts" in your introduction to my

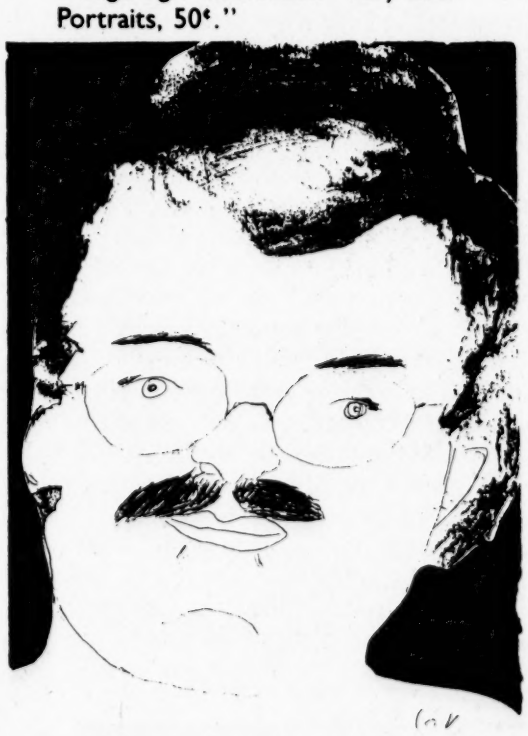
piece "On Farting" (*CQ* #34, p. 80). That article has gotten more mileage than you could imagine — it's been reprinted three times, once in Germany, has reunited me with old friends, has brought correspondence from folks from far and wide, and best of all, was instrumental in getting my novel, *Firewater Ponds*, published. I topped my 500-page manuscript with a copy of "On Farting" and mailed it to fellow Mainer Stephen King. He called a couple of weeks later to tell me he loved "On Farting" and couldn't wait to read the enclosed manuscript. He liked that as well (He told the *Maine Times* this January that it was the best book he had read in 1984) and sent it off to his editor, who sent me a contract.

—Michael Kimball
Coopers Mills, Maine

Very bad portraits, 50¢

Several years ago ('79 - '81) I moved from Miami to L.A. to try my hand at screenwriting. I guess I was a flop. Nearing the end of this ordeal I got an idea, "If I can't sell what I enjoy/do best (write) maybe I should try selling something I'm *really bad at*.

The next weekend, I went down to the busy Venice boardwalk with a lawnchair, drawing equipment, and a large sign which read "Very Bad Portraits, 50¢."



It worked. People loved it. It was my weekend profession until the LAPD threatened to arrest me the following weekend (no permit, etc.).

I returned to Miami and again took up (excuse me while I yawn) lawyering. We've got a big art festival every February in Coconut Grove, a typical art fest, I guess. I got permission to do my bad portrait thing in the middle of it all if I promised to give the proceeds to charity.

I invited local celebrities to join me (TV anchors, newspaper reporters, weathermen, mayors) and together we drew 700+ heads in 3 days @ $1 a shot. I do it every year now. The "Bad Portrait Booth" is now an established Coconut Grove tradition.

—Glenn Terry
Coconut Grove, Florida

Painless cure for Social Security

The Social Security System's problems can be cured painlessly. We all know that a very large sum of money will grow quickly as it draws compound interest. Thus, if the Social Security System had a $100 billion fund to invest, it could spend $10 billion more each year without reducing the fund. But how can we start putting that huge fund in place right now without raising taxes a dime?

We begin a national lottery. All profits go directly into the Social Security Superfund. Each year, for 15 years, more lottery profits and the proceeds from compound interest payments swell the fund larger and larger. After 15 years, we begin to reap what we have sown. All investment proceeds (excluding the return of principal) are now used to increase Social Security payments to the elderly. Meanwhile, the superfund will still be growing with yearly lottery profits. Let's start now, because we're *all* getting older.

—Joseph Mitchener
Salinas, California

The majority rule amendment

The system is not working.

In the past, the answer has been revolution, but only a lunatic fringe still clings to that idea as a serious option. The rest of us realize that we must effect change without provoking violence.

We have, fortunately, an admirable tool at our disposal: amending the Constitution. This is what I propose to do. My amendment is radically different from previous ones. Unlike most, it involves the giving up of a "freedom" on the part of some. And unlike all others, it is to be a temporary measure, intended simply to open up new possibilities.

It might also be argued, with some justification, that the answer to our woes can never be found in government at all. I won't try to refute that objection. In many cases, it may well be so. I would only say that government can lead in those areas where it cannot effectively legislate. And in such matters as international arms control, the *only* ones who can make a difference are those at the highest level of government.

The question is how best to profoundly alter the make-up of our elected bodies, while preserving the electoral process. I propose the Majority Rule Amendment to do just that. It was formulated according to the following principles:

First, it should be concise.

Second, it should be immediately comprehensible to anyone, regardless of educational level, who speaks the English language. It should not require a single lawyer for its interpretation.

Third, it should bring into being no new bureaucracy.

Fourth, its enforcement should be simple.

Fifth, it should create a climate conducive to change.

Ideally, our new leaders should be more responsive to the real needs of people; more compassionate; more attuned to the personal sacrifices that may have to be made; less susceptible to the lures of ego and the macho mentality; less subservient to life-destructive pressure groups; more closely connected to the earth itself.

There are, of course, no guarantees. Our elected officials may have such qualities or they may not. We cannot ensure it. Nevertheless, we *can* facilitate the possibility.

I therefore propose the following amendment to the Constitution of the United States:

Beginning in [year to be decided] *and continuing for a period of* [to be decided] *years, no male will be allowed to hold elective public office.*

I stress that the only offices affected would be elective (not appointive) and public (not private sector). The number of such positions is relatively small. But their collective power is sufficient to the task at hand.

We have endured men's inadequacies for far too long. Let the majority rule.

—Doug Hornig
Afton, Virginia

A Short History of the First 50 issues of *CoEvolution Quarterly* & *Whole Earth Review*

by Art Kleiner

The magazine you hold in your hands is an afterthought. Its first issue was an afterword to the Whole Earth Catalog, *and each succeeding issue an afterthought of the previous one. Proceeding issue-by-issue is one way to make a magazine without having a million dollars, advertisers, or an identified audience. The "Short History of the First 50 Issues" is an amplification of material that Art Kleiner wrote for* News That Stayed News *(see page 143).*

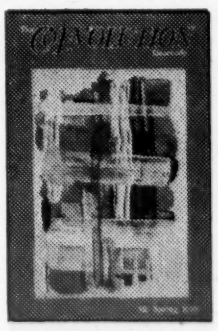
—Kevin Kelly

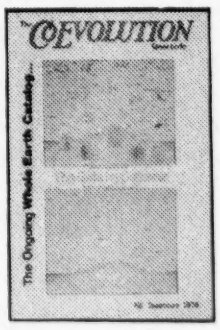
Issue 1 (Spring 1974): After a two-year hiatus from publishing, Stewart Brand (who signs himself SB in the magazine) founds *CoEvolution Quarterly* simultaneously with editing the *Whole Earth Epilog.* "I had [originally wanted] to call it 'The Never Piss Against the Wind Newsletter'..." SB writes in the *Epilog.* "I did have a formula in mind: we would print long technical pieces on whatever interested us — the opposite of the predigested pap in, say, *Intellectual Digest.*" The first issue is small (96 pages) and introduces an ongoing concern with forecasting environmental/energy/economic apocalypse. Richard Nilsen and Rosemary Menninger begin their long associations with *CQ* as "Land Use" reviewer/evaluators. Michael Phillips, author of *The Seven Laws of Money,* makes his first of many *CQ* appearances here reviewing personal satellite links.

Issue 2 (Summer 1974): Long (174 pages), perfect bound (making it look more like a book than a floppy magazine). Introduces young curmudgeon/naturalist Peter Warshall ("I daydream of the day when BOOK [field guides] die out and a strong spoken tradition revives.") Introduces J. Baldwin, *CoEvolution's* authority on soft technology (known to some people as alternative or appropriate technology) and nomadics. Introduces editor-to-be Stephanie Mills, writing on salons. One article describes the New Games tournament, which SB had invented the previous Fall. The only dramatic play published in *CQ*, Michael McClure's "Gorf" (about a giant penis aloft in the apocalypse), appears this issue.

Issue 3 (Fall 1974): This issue is guest-edited by the Black Panther Party of Oakland, California, who design it to read and look like one of their newsletters. "Now that it's out," writes SB on the inside front cover, "maybe the Panthers ought to have guest editorship of the City of Oakland for a while."

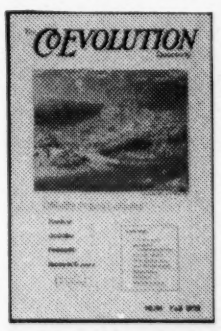
Issue 4 (Winter 1974): Gregory Bateson, whose work and conversation will form a philosophic underpinning for the magazine, is first introduced to *CoEvolution* readers. J.D. Smith, "Whole Earth's resident cowboy," returns from Idaho to be a regular presence in the office and magazine for the next three years. *CQ's* original offices (on a pier in Sausalito, California) are threatened by development, so the magazine moves one mile north. "You've heard of industrial parks?" writes SB in the magazine's "Gossip" column. "We're in the longhair industrial dump at Gate 5 now, in a building called 'HARVEY'S LUNCHES' and as unwelcoming to visitors as ever. Mail we love."

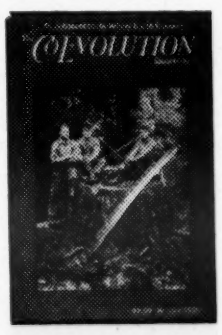




Issue 5 (Spring 1975): First of many appearances by Wendell Berry in the magazine. An article about nitinol, a metal alloy that people thought could make mechanical engines powered from solar heat, will generate mail from curious would-be inventors for years. J. Baldwin writes "One Highly Evolved Toolbox", a description of his most-used tools; one of *CQ's* most popular articles, it will get updated five years later in the *Next Whole Earth Catalog* and six years after that in the *Essential Whole Earth Catalog.* Zentatsu Richard Baker-Roshi, abbot of the San Francisco Zen Center, makes his first *CQ* appearance with a transcript of one of his lectures. Later, he joins the board of *CQ's* parent organization, the nonprofit Point Foundation.

Issue 6 (Summer 1975): First of many articles on the Gaia hypothesis: James Lovelock and Lynn Margulis describe their hypothesis that the Earth acts as a single living organism, with the atmosphere as circulatory system. Dan O'Neill, creator of "Odd Bodkins" in the 1960s, begins eight years of quarterly cartoons for *CoEvolution*. Young hacker Marc Le Brun inaugurates a section on personal computers — the first coverage of personal computing by any general-interest magazine. J.D. Smith brings volleyball (a *Whole Earth Catalog* office sport) to the *CQ* office — two games a day on paid time when the weather's nice. With the end of large sales of the *Whole Earth Catalog, CQ* begins "an austere period, its first since 1968." That austere period will last for the rest of *CQ's* history. SB introduces the uniform wage — everyone in the office gets $5/hour.

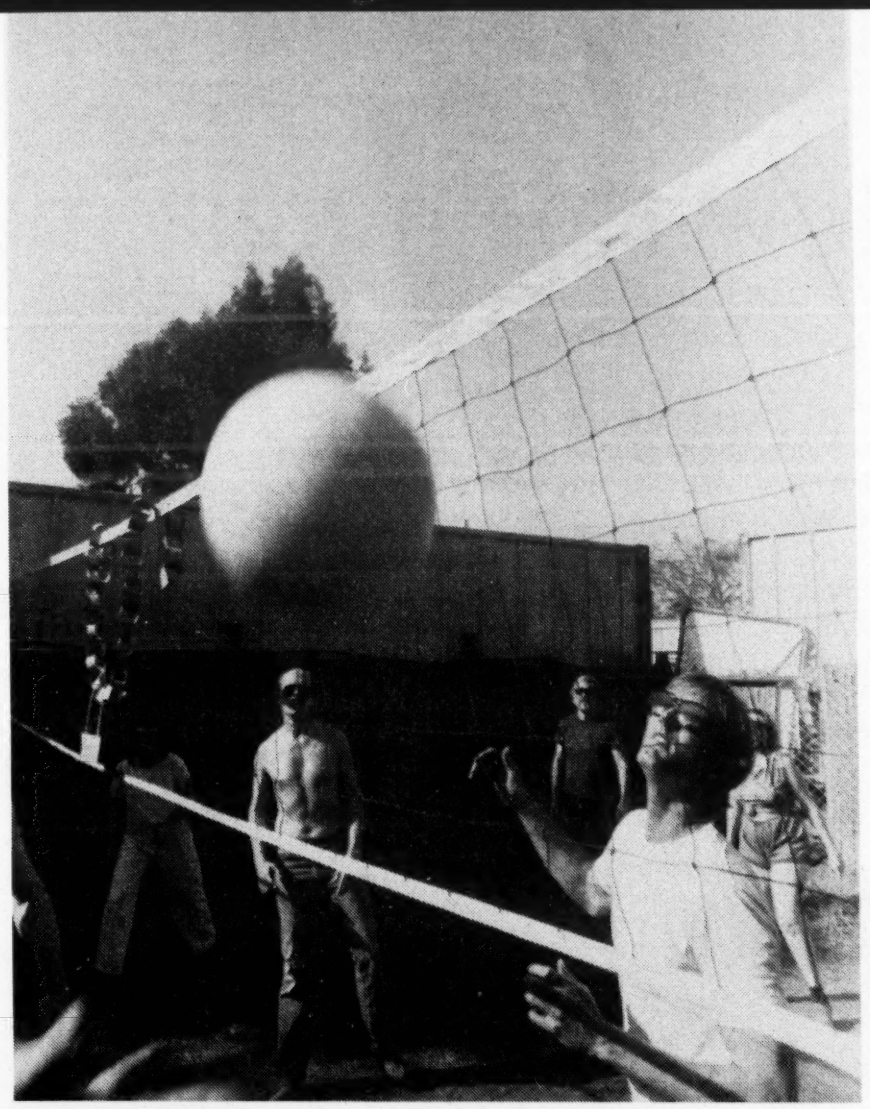




Issue 7 (Fall 1975): The cover announces "[Gerard] O'Neill's Space Colonies: prac-

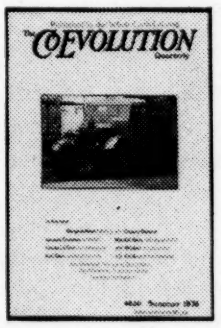
tical, desirable, profitable, ready in 15 years." This kicks off a debate between proponents and opponents of space colonies (thousands of people living years in totally manmade environments in space) that lasts four issues and introduces arguments between ecologists and technologists that will reverberate in various forms throughout the magazine's history. This issue also includes the first of five *CQ* interviews in the office of California Governor Jerry Brown; SB introduces Gregory Bateson to the governor and monitors the talk with a tape recorder. Editor-to-be Jay Kinney makes his first *CQ* appearance this issue as a cartoonist. Renowned typesetter Evelyn Eldridge returns to Whole Earth (she had typeset part of the *Last Whole Earth Catalog*). Andrea Sharp, who had previously handled research, becomes *CQ*'s office manager/bookkeeper. To save money, SB limits this and most future issues to 144 pages.

Issue 8 (Winter 1975): J.D. Smith guest-edits an issue more hippie-oriented than usual, without any of the usual section headings; "having been around the heading 'Whole Systems' for years," he writes, "and trying to fit things in and out of it, the categories get melted into one another."



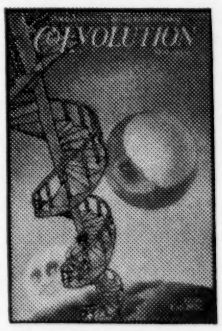
All photographs by Kevin Kelly

An instant in Whole Earth's regular afternoon volleyball game. Richard Nilsen at the net right, Matthew McClure at the net center.



Issue 9 (Spring 1976): 75 pages of responses to "Space Colonies." SB asks 40 writers and thinkers to respond on the topic and prints the results, a technique used successfully several times during *CQ's* history. Storyteller/teacher Ron Jones's true story "Take As Directed," about a simulated Third Reich in high school, appears. Norman Lear will later make it into a made-for-TV movie. *CQ* business manager Andrew Fluegelman leaves to start his own publishing house, the Headlands Press; he will eventually become well-known in personal computer circles as the inventor of "freeware," or user-supported software.

Issue 10 (Summer 1976): Introduces writer/artist/radio enthusiast Robert Horvitz, who will become *CQ's* "art editor," a liaison with conceptual artists. Cartographer/graphics mainstay Don Ryan joins the staff. Wendell Berry and SB quarrel in print over space colonies. "How long is it going to take us to live down the 'Space Colony' issue?" writes SB in "Gossip."



Issue 11 (Fall 1976): *CQ* publishes its first special product, a map of "World Biogeographical Provinces." An article by Herman Kahn prompts SB to change his first section heading to "NO Apocalypse?!" SB and Gregory Bateson hold a conference to address the pathology of Cartesian mind/body dualism, and SB prints some of the position papers in this issue. Architect Malcolm Wells advocates underground architecture ("I do it primarily because it is so beautiful"); his article will later become the basis for a book about same.

Issue 12 (Winter 1976): Peter Warshall shall guest-edit one of *CQ's* most popular issues, on watershed consciousness and politics. SB advertises for an "assistant editor, someone to help me expand my range"; writer Anne Herbert responds from Columbus, Ohio, gets hired, and makes her first appearance this issue. Her values, oriented to people and processes instead of ideas, will come to modify the magazine's printed sensibility. Ben Campbell, also oriented to people and processes, joins the staff this issue as a clerk; he will eventually become librarian. SB joins Governor Brown's staff as an ongoing part-time consultant. "Sacramento, to me, is Oz," he writes. "Munchkins, witches, wizards, the motley band with Dorothy, and all. There's dazzling magic. You gesture gracefully toward yonder wall, and PHOOM! spectacular goings-on. Gesture again: PHOOM! over on that side. Gesture again: nothing happens. Gesture repeatedly: nothing happens. Turn your back: PHOOM! As Jimmy Breslin said of politics, 'It's all done with mirrors and smoke.' What isn't?"

Issue 13 (Spring 1977): Introduces a regular section heading on "Politics." Introduces cartoonist Robert Crumb, who will appear regularly in *CQ*. Introduces Carol Scott Van Strum, who will become Whole Earth's "Learning" editor. Introduces medical editor Tom Ferguson, M.D., who will shortly thereafter start his own quarterly magazine, *Medical Self-Care*. SB reports in "Gossip" that Gregory Bateson has been appointed to the Board of

How this magazine is made

by Kevin Kelly

NOT QUITE enough people put out this magazine on not quite enough money. Both of those shortages mean that the process of assembling the magazine is abundant with thrifty short cuts and an ingenious staff doing double or triple duty. Some staff have titles to match, as in Dick Fugett, general purpose clerk. Dick untangles subscription problems, is the voice that often answers the phones, and is gearing up a possible Whole Earth radio show. The rest of the crew have more mundane honorifics but equally diverse assignments.

Cooking up an issue of *Whole Earth Review* begins at our waterfront office mailboxes. Three-quarters of the quarterly is written at a distance by readers. The mail is sorted into baskets; manuscripts and article queries go into part-time assistant editor Richard Nilsen's tray. The result of his careful reading is a handful of articles that he passes on to me for my opinion. The outstanding or simply interesting ones get cursory copy editing from Ken Conner, whose other responsibility is the *Whole Earth* syndicated weekly newspaper column. Our policy is to avoid rewriting. It robs the reader of the voice of the author, and robs us of our scant energy. We do try to maintain consistency within each author's piece.

At the tail end of some book reviews is a [suggested by . . .]. When a reader suggests that we review a book, Richard Nilsen replies with a post card of acknowledgement. Librarian David Burnor requests a review copy from the publisher, files the letter, and reunites it with the book when it arrives. That can take the publisher weeks to nine months. The book or evaluation item goes on a shelf for the domain editors to look at, review or reject. I estimate that we publish 1 out of 100 items we see, 95 percent of which are sent by the producer, and not readers. A very high percentage of readers' suggestions are right on target; we pay $20 for each one we use. (And another $20 if it comes with a review we use).

Our least thanked, and most arduous task is what we call "accessing." That's the frustrating chore of making sure that what is reviewed is still available at the price

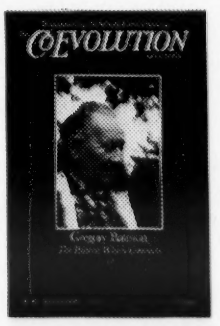
We love mail. At left is a portion of the mailbox wall: the photo is a year old — Andrea is now working at another job, and Richard Nilsen now gets most of Stewart's mail.

Regents of the University of California ("the closest thing this state has to knighthood").

Issue 14 (Summer 1977): Introduces fiction writer Will Baker with "Left Over in Your Heart." Publishes Peter Warshall's interview with astronaut Rusty Schweikart, another *CQ* regular, on urination and defecation in space. Reprints a report from Stanford Research Institute called "Voluntary Simplicity," which says, "The fastest growing sector of the market is people who don't want to buy much." Many *CQ* readers read into this study either vindication of their values or a frightening warning that the mass culture may co-opt them.

Issue 15 (Fall 1977): John Perlin and Ken Butti find evidence of solar power use in the early 20th century, material that will eventually become a book (*A Golden Thread*). Reacting against attempts by the city of Sausalito to "sanitize" the waterfront area at the expense of its residents, SB begins writing about neighborhood preservation, an ongoing interest that will eventually crystallize into a series of articles in *CQ* on the practice of local politics. Jeanne Campbell, "longtime voice of *CQ* in all promotion and distribution matters" and "Godzilla on the volleyball court," leaves the staff. Researcher/subscription handler David Burnor joins the staff. Penguin Books publishes the first of two *CQ* books, *Space Colonies,* a compendium of *CQ's* material on that subject.

Issue 16 (Winter 1977): Larry Lee and Scoop Nisker, news reporters and performers on KSAN, a San Francisco radio station which "invented the progressive-rock format," guest-edit a special issue of *CQ* on broadcast. "How often does one get to edit one's favorite magazine?" they write. "It is doubtful that our second favorite, *The New Yorker,* is going to follow suit." Jerry Mander's article, "Four Arguments for the Elimination of Television," will later become a book with the same name. Patty Phelan and Dick Fugett join the *CQ* staff; Patty to "do projects," Dick to handle subscription complaints and eventually to write *CQ's* popular tongue-in-cheek renewal letters. *CQ* raises its annual subscription rate to $12.



Issue 17 (Spring 1978): *CQ* unearths the scrambled fable "Ladle Rat Rotten Hut"

and place we say it is. Since we don't run items we haven't held in our hands, it also means making sure we have a current copy or sample. As boring as accessing is, our integrity lives on it. The only way we find to be accurate is to telephone each source within the month we go to press. David Burnor says you can't trust *Books in Print* — it is too often mistaken. As research on *The Essential Whole Earth Catalog* blasts off, the number of accessers has swelled to five (David Finacom, Don Baker, Dorothy Houser, Christina Sponseller, and Cindy Craig).

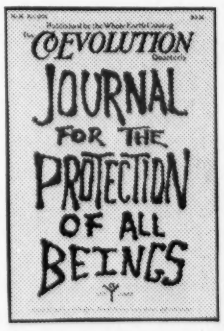
Articles may also travel into the magazine along phone lines. A long-distance author will launch a story from his home computer in Florida and herd it through the telecommunication networks until it eventually lands inside our typesetting machine. The same letters the author keyed are set into type, making the authors typesetters, sort of. In this issue, "Peace As A Whole System," "Good Movies," "Jury," "Mediation," "Sabremetrics," and "Gossip" were hauled in that way. If typesetting were merely a matter of pounding keys, I could say this method would be a snap, but our typesetting machine (a Compugraphic MCS) is an ornery beast that needs frequent whipping by James Donnelly, resident animal trainer (Fifi, the pet rat), cartooner, and typesetting guru. Under the load of three typesetters in relay, the machine often balks and spews out mangled text. But James's genteel mule-skinner manner overpowers the brute and evokes whole prefabricated pages — columned, ruled, and page numbered — from the growling maw.

In a very crowded back room, Hank Roberts and production manager Susan Ryan proof the copy twice and once more after it's corrected. A xerox of the text is handed over to Kathleen O'Neill (KO) who designs the pages by taping the pieces onto a gridded layout sheet. KO also xeroxes the illustrations to approximate size and tapes them into place. (She uses a simple and fairly reliable Canon NP 400F copier that has a 127 percent enlargement and 75 and 64 percent reduction scales. The copy quality is occasionally sufficient to pass as final artwork. A clay-coated paper is used then so it can be pasted down without paste-wax seeping through). Usually KO makes headlines and titles by rubbing letters off transfer lettering sheets

Typos make the authors look dumb when it's really our fault. Proofreader Hank Roberts helps keep printed typos to a minimum (about three an issue on average).

and prints a popular article on using road kills for meat. SB organizes a benefit for R. Crumb, who owes the IRS $35,000 after being "shafted by crooked lawyers." Kathleen O'Neill, who will eventually design *CQ's* pages, joins the staff. An article called "In Defense of Sacred Measures," by Englishman John Michell, begins an ongoing argument against the introduction of the metric system into America. The cover article, about how language can cause or cure disease — based on author W. C. Ellerbroek's work with acne — ensures that this issue will forever be known around the office as "the pimple issue." The second Penguin/*CQ* book, a compilation of energy-and-tool-oriented articles and reviews called *Soft Tech,* appears. *CQ* attempts its first large-scale mailing list rental and promotional mailing, which fails miserably. *CQ's* circulation reaches 30,000 with this issue, and henceforth will hold steady there, or a little below.

Issue 18 (Summer 1978): Introduces the "Million Galaxies Poster," a computer photo-map of "the large-scale texture of the universe." SB announces the "Whole Earth Jamboree," a two-day tenth-anniversary festival for Whole Earth, held in August, organized by Patty Phelan. "The last time we had a party (The Demise Party in 1971), we gave away $20,000 in cash to the crowd," SB writes. "That won't happen this time. Other things will." In "Gossip," he adds, "Of the invited speakers for the event even those refusing have style — from the graceful [Ursula Le Guin: 'Woe. Alas. Phooey. Sob'] to the cruel [Lewis Mumford: 'Thank you! But to escape the Whole Earth Jamboree I'd buy a one-way ticket on a spaceship to Saturn']."



Issue 19 (Fall 1978): "The Poet's Issue." Guest-edited by beat poets Lawrence Ferlinghetti, Michael McClure, David Meltzer and Gary Snyder, this issue is designed as a rebirth of a 1961 City Lights magazine called the *Journal for the Protection of All Beings.* The editors write, "We aimed at an issue centered on how to liberate mind & body and protect endangered species (including ourselves) from pathogenic industrial civilization." Partly because of its unfamiliar format, this becomes one of the most controversial (and worst-selling) issues *CQ* has published. Future guest-edited issues will usually involve at least one Whole Earth staffer as editor.

Issue 20 (Winter 1978): "The Jamboree Issue," quoting liberally from speeches at the Whole Earth Jamboree. At the end of the issue, Anne Herbert comments on the Jamboree as a "community that had temporarily become a neighborhood." Sheila Benson begins her regular film review column, "Good Movies," in *CQ*.

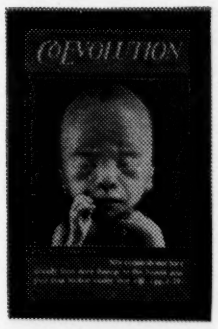
Don Ryan photographs a bucket load of books with an awkwardly contorted view camera. A Polaroid 4x5 sheet film back loaded with type 52 film does the trick.

sold in art supply stores. Ornate, eccentric, and zany letter styles are reproduced from a collection of inexpensive books of fantastical alphabets (a good example is *Victorian Display Alphabets,* $4.50 from Dover Publications, 180 Varick St., New York, NY 10014). Don Ryan shoots the letters on his trusty wall-mounted Polaroid MP-4 camera and then pastes the words together. He uses the same rig to photograph illustrations out of the books that are reviewed and to reproduce article graphics from various sources. Pictures smaller than three by four inches can be half-toned in the process.

To get the book covers angling across the page in their distinctive and inimitable perspective, Don erects a view camera with a Polaroid 4x5 back and shoots the books lying on the floor, titles upside down to the photographer. The Polaroids are halftoned as a gang at a local graphics shop, brought back, cut out, and pasted down in position on the layout "flats." The flats we send to Progressive Graphics in Illinois to be made into negatives are unusual among most magazines' in that they are nearly completely "camera ready" — all type, artwork and previously halftoned photos carefully glued into place. This is extra work, but because we assemble 144 pages in a very small room where things that don't fit on a spread exactly can be passed by an outstretched arm, each page becomes handcrafted.

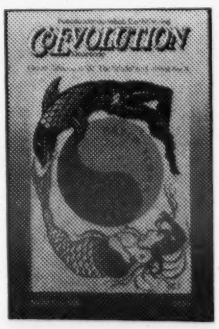
A pool of regular old-timers is called in to help Don, KO, and James paste up the magazine in four weeks. Jay Kinney, who usually takes a break from his own magazine *Gnosis* to design and paste up pages, is the most expert. (How *Gnosis* is made: nearly everything is done by an overworked Jay Kinney on a Macintosh computer.) At Whole Earth production, straight edge, razor, and melted wax are the tools of choice. The wax (similiar to beeswax) is a crucial ingredient that is kept melted in a nifty shoebox-sized dispenser (the Artwaxer) that coats the backs of papers so that they adhere firmly yet can be peeled up without trouble. It's one of the few machines we couldn't do without.

Poverty stemming from our emphasis on delivering content rather than marketing form requires us to print art work on paper one step away from newsprint (Mando Print). Occasionally American Press, our printer in Columbia, Missouri, will pour on the ink ("we don't charge you



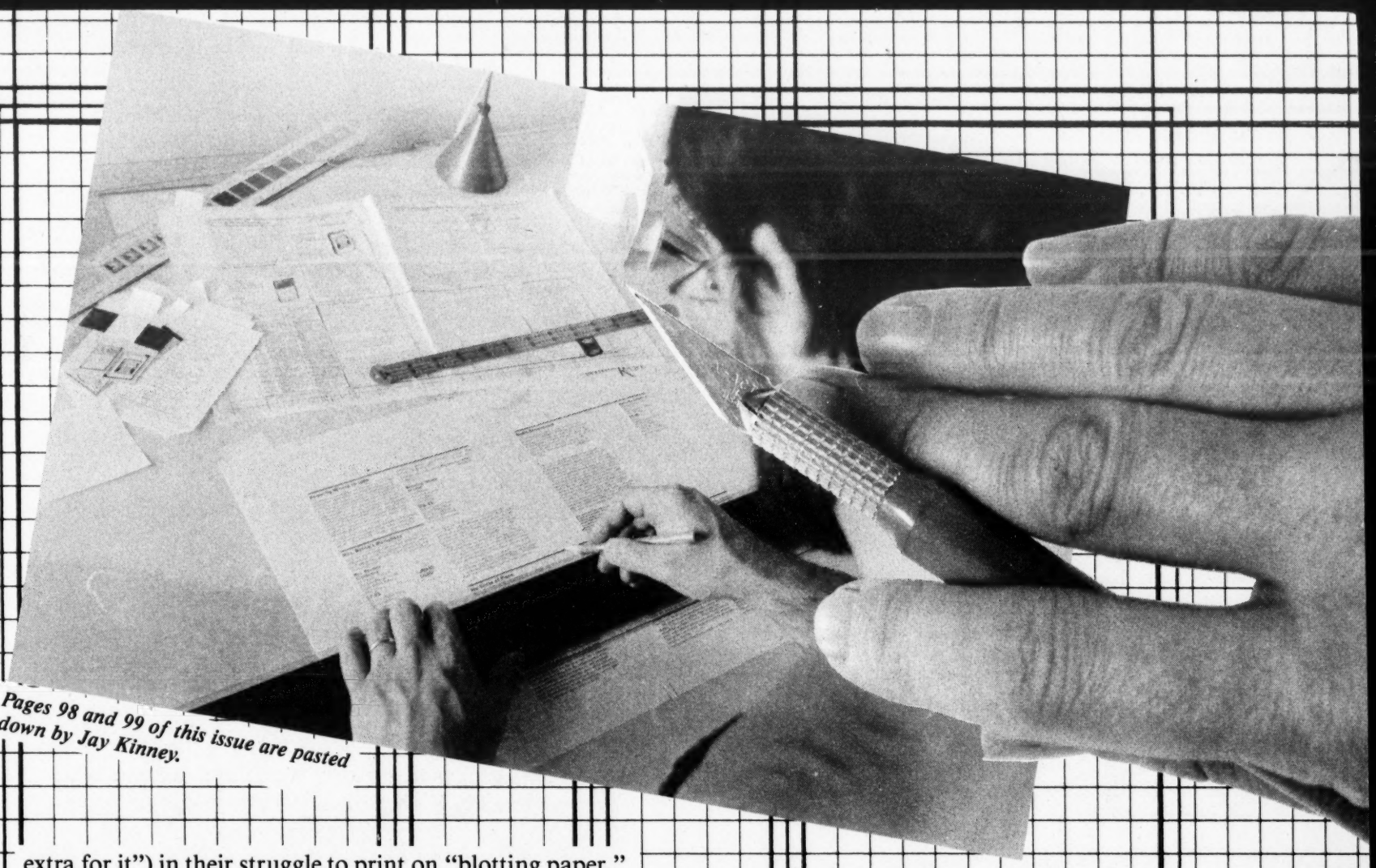
Issue 21 (Spring 1979): SB researches and writes "Genetic Toxicity." The cover announces, "New chemicals may have already done more damage to the human gene pool than nuclear energy ever will." In the same issue, "Used Magazines" queries *CQ* regulars on their favorite magazines. Editor-to-be Art Kleiner appears for the first time, writing about the history of magazines. Dan O'Neill, protesting a $190,000 copyright infringement suit from Walt Disney for an underground comix parody he did of Mickey Mouse, draws a four-page "communique" from the Mouse Liberation Front." It ends by announcing, "The preceding comic strip is a federal crime — contempt of the Supreme Court of the United States."

Issue 22 (Summer 1979): Disney responds to the Mouse Liberation Front by suing SB, Dan O'Neill, and Point Foundation for criminal and civil contempt of court (maximum fines: $10,000 each). SB publishes an open letter to Disney president Donn Tatum in *Variety,* saying: "I'm reserving equal space (four pages) in the Fall *CoEvolution* for Disney to reply to O'Neill or do whatever it wants. If Disney parodies us, I would not mind, or sue. Parody, as part of Free Speech, is a fragile right, all too susceptible to overzealous suing. . . . How would Mickey handle a situation like this? He'd come up with some goodhearted solution no doubt."



Issue 23 (Fall 1979): Guest-edited "Oceans" section by *Mariners' Catalog* editors Peter Spectre and George Putz, who visit from Maine for the occasion. Patty Phelan leaves to manage Planetree, a San Francisco health resource library and information/advocacy service. Anne Herbert resigns as assistant editor to be replaced by "Land Use" evaluator Richard Nilsen. Disney offers to withdraw its charges if O'Neill and *CQ* promise never to draw or print Disney characters again, and to help stop other artists from parodying Disney characters. SB refuses ("I don't like seeing copyright law used to stifle criticism which is supposed to be protected by law") and prints four blank pages labelled "Walt Disney's reply to Dan O'Neill."

Issue 24 (Winter 1979): The "Swastika Issue." Cover artist Robert Crumb, illustrating Antler's poem "Factory," draws a cartoon of a factory worker with swastikas in his eyes. Nine *CQ* staffers protest; Anne Herbert withdraws her writing from the issue. SB keeps the cover, prints her protest ("I think the cover is immoral") and his reply ("If *CQ* is marginally different from other publications, it is partly in our defense of the contributors' material from the



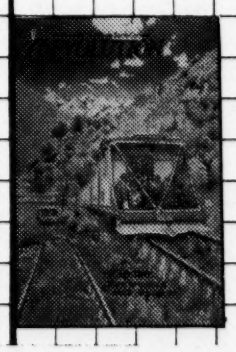
Pages 98 and 99 of this issue are pasted down by Jay Kinney.

extra for it") in their struggle to print on "blotting paper," as they call it. If enough subscribers buy gift subs for their friends, we hope to print on the next paper grade up — Mando Brite — slighly whiter, with finer clarity.

I derive great strength from avoiding meetings. Whole Earth has a tolerable total of four a year. As the mail coalesces into the germ of the next issue, the staff gathers for a meal/self-crit/company meeting in the flower-bedecked courtyard. A week or so previously a copy of the current issue circulates among personnel, accumulating

Text and pictures are put into place on posterboard "flats" printed with a light blue grid invisible to printers' graphic cameras. Thicker, light-blue lines denote where our columns usually go. Photos are halftoned first and then slipped into final position, aligned by the squares.

depradations of insurance mentality or group think"), and invites reader response. "In the brutal/apologetic tones you would use asking someone to scrub the toilets," SB hires Art Kleiner to begin work coordinating the *Next Whole Earth Catalog.*

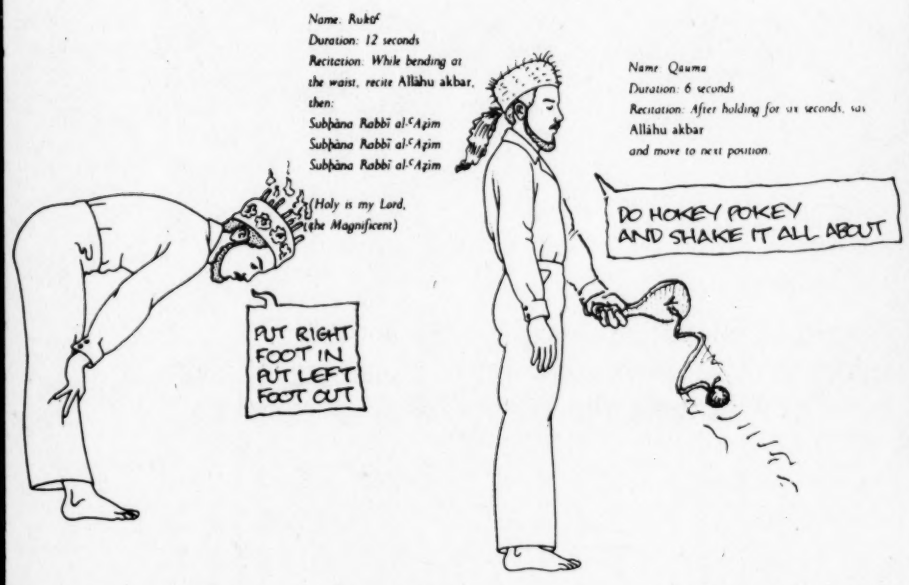


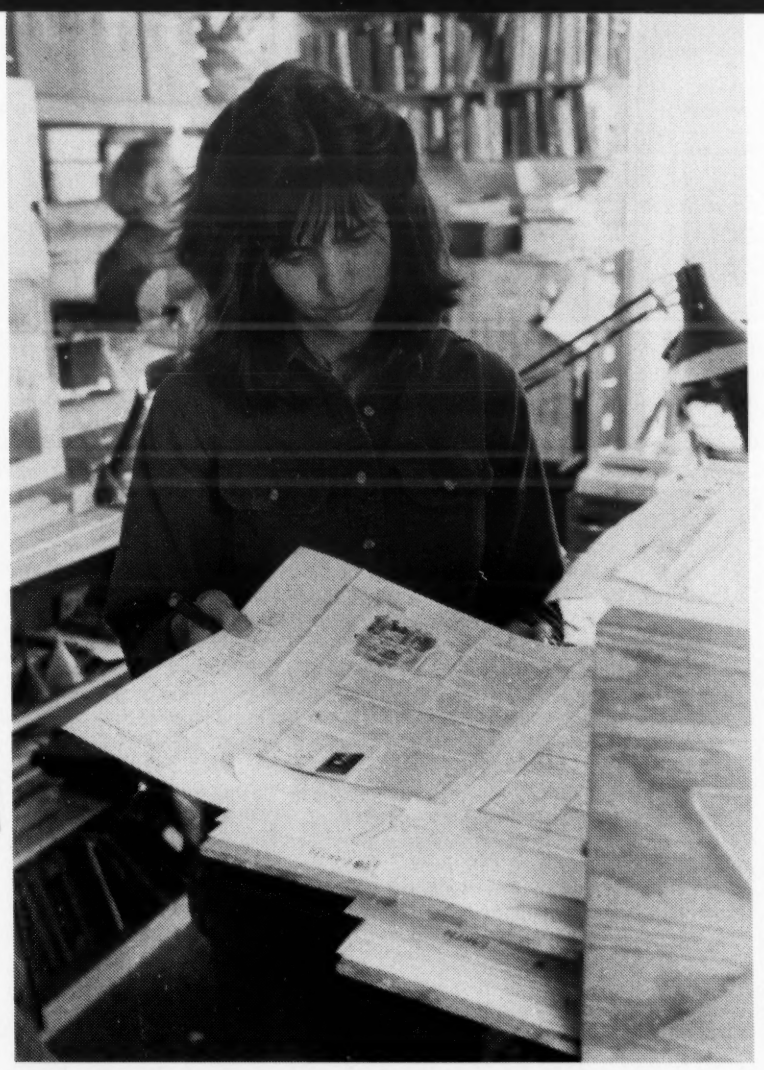
Issue 25 (Spring 1980): Several articles appear on Third World culture and politics, beginning an unplanned but prominent *CQ* preoccupation that will last the next four years. These include "Shramadana" by Joanna Rogers Macy, an article on using community to tackle huge projects. In response to the swastika cover, *CQ* receives "ninety-one letters," reports SB. "41 disliking or hating the cover (3 cancelled their subscriptions), 31 liking or loving the cover, and 19 mixed, informative (swastikas aren't just Nazi, you know), peace-making, or indecipherable." The independent but allied Whole Earth Truck Store, almost out of business, is bought by the San Francisco Zen Center and becomes the Whole Earth Household Store. Disney settles with O'Neill and *CQ*, who agree to stop drawing or printing mice; Disney drops its previous $250,000 lawsuit. The staff swells to nearly twice its size to put out the 608-page *Catalog.* Stephanie Mills joins the staff as assistant editor, alternating with Richard Nilsen.

Issue 26 (Summer 1980): Introduces Ivan Illich as a regular *CQ* contributor, with a 27-page essay "on the fate of Vernacular Values during the last five hundred years of warfare that has been waged by the modern State against all forms of Subsistence." It will later become a book called *Vernacular Values.* Illich writes, "I guess that, in 1980, through no other Journal I could reach a comparable motley readership of unusual critics." This issue also introduces economist/small businessman Paul Hawken, who will become *CQ's* most popular author and the most influential member of the Point Foundation board. Another article by Peter Nabokov and Margaret MacLean will later become a book: *Indian Running.* Meanwhile, the staff is consumed by work on the *Next Whole Earth Catalog.* "None of us have private lives or social lives left worth mentioning," writes SB. "For lack of a life, Anne notes, we've gone in for dressing weird — her tie, for example, sports a paper dollie with staples in its head."

Issue 27 (Fall 1980): Everyone is too exhausted to do an issue. Subscribers gleefully receive a copy of the *Next*

comments, astute criticisms, sincere praise, and much clever graffiti. These are read aloud page by page, invoking more comments and articulating the self-correction loop for this publication. Humor, as Marvin Minsky explains in this issue (p. 4), is a self-correction mechanism. We get a surge of humor via the self-crit pages in every issue that James Donnelly deftly retouches with cartoons and titles that "should have been there in the first place." As a sample, the touch of his pen on pages 18 and 19 of the Islam issue (#49). A few days after the self-crit, the typesetting machine begins to whimper, and the next issue meshes into gear. ■

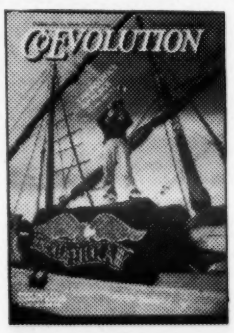




As each flat is completed, it gets checked off and moved up to the next step in the process. Susan Erkel Ryan is the production manager who knows where all the thousands of tiny pieces are.

Whole Earth Catalog instead. The subscription price goes up to $14/year. The *Catalog* is dedicated to Gregory Bateson, whose death on July 11 will be described by his daughter, Mary Catherine Bateson, in an article in the following issue.

Issue 28 (Winter 1980): Guest-edited by Anne Herbert, this issue focuses on neighborhoods and includes articles by several previously unpublished (in *CQ*) staffers — David Burnor, Dick Fugett, Don Ryan, *Catalog* co-designer David Wills, proofreader Angela Gennino. *CQ* reviews take on a tone of update to the *Catalog,* often specifically filling in niches that the *Catalog* didn't cover. Editor-to-be Kevin Kelly makes his first appearance with a page of haiku written while bicycling across America. An article by Orville Schell about antibiotics in meat will later become a book, *Modern Meat.* Another article by Wavy Gravy about the Seva Foundation's work to end preventable blindness in Nepal will later result in a $10,000 gift to Seva.



Issue 29 (Spring 1981): Paul Hawken's article "Disintermediation" will later become the core of his book *The Next Economy.* Typesetter Evelyn Eldridge-Diaz, who has worked for Whole Earth since the *Last Whole Earth Catalog,* resigns to take care of her new daughter, Maria Francisca. Office manager Andrea Sharp also has a daughter, Sarah, who spends the first year of her life watching her mother work in the *CQ* offices.

Issue 30 (Summer 1981): The local politics issue, formally opening up the practice of local politics as an ongoing topic of concern. This issue introduces Bryce and Margaret Muir, a toymaker and anthropologist, who will take several *CQ*-published concepts — disintermediation, local politics — and test them in the real-world laboratory of their town in maritime Maine. A Betty Dodson illustration this issue of two women making love in space, running with a short story called "The Day They Tested the Rec Room," will provoke a swarm of subscriber protest. Working on a *Next Whole Earth Catalog* revision, Joe Kane joins the *CQ* staff and introduces professional-level copy editing — a controversial move in a magazine that prides itself on never changing an author's words. The revision also brings in typesetter Susan Erkel, later to become production manager.

Issue 31 (Fall 1981): The Point Foundation loses some of what it made on the first edition of the *Next Whole Earth Catalog* by creating a second edition only a year later, which leads to large returns of the first edition. The second edition never sells all of its overlarge first printing, 150,000 copies. Since the Point Foundation, not Random House, is the publisher (thus paying for the printing), that effectively ends income from the *Next Catalog* to *CQ* for at least the next several years. An article by Alia Johnson ("Stopping the Unthinkable") lists, for the first time in one place, groups organizing against nuclear war and foreshadows a new wave of peace movement activity during the following year.

Issue 32 (Winter 1981): Stephanie Mills and Planet Drum editor Peter Berg guest-edit an issue on Bioregions — "government by life," in the words of writer Jim Dodge; government by indigenous peoples, local cultures, and ecologically distinct communities, all influenced by the natural systems around them.

How *WHOLE EARTH REVIEW* Gets To Readers

You pay $18 and send the money directly to us. That's $4.50 an issue, the same as the cost on the newsstand. This is the most efficient method because the magazine is going from Missouri, where it's printed, directly to you. Since there are no other people in the chain, the entire $4.50 per issue comes to Whole Earth.

Of the $4.50 we receive, $.75 goes to "fulfilling" your subscription — printing and mailing your issues and keeping track of your subscription on the computer at Subscription Fulfillment Services, our fulfillment house in San Diego.

The remaining $3.75 never quite pays the phone bill, rent and salaries, a fact known to regular readers of our financial report, which is why we have another way of reaching readers.

The other channel we use to get the *Whole Earth Review* to readers is through newsstands, bookstores, health food stores, etc. One of the reasons we do this is to expose the *Whole Earth Review* to new people, who we hope will become subscribers.

The drawback to this method is that in getting the magazine from us to you it's no longer going direct. We're going through a complicated chain of other people who perform different services for us — opening new accounts, invoicing, administrating — and who make their profits by buying the magazine at one price and selling it for a higher price. These other people include the national distributor, the regional wholesaler and the local retailer.

We earn only $2.40 for each copy sold. That's the amount Dell, our national distributor, pays us. By the time you buy it at your local newsstand, it costs $4.50. The additional $2.10 pays all the people in the channel.

But there's a twist in this system that hurts. Magazines are not like most products. They're sold on consignment. If they don't sell in the retail store, we don't make any money. Unsold copies get returned by the retailers for credit and are shredded into pulp.

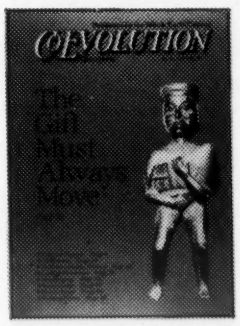
No one has to pay for them — not the retailer, the wholesaler, or the distributor. No one, that is, except us. We have to pay to have the magazines printed and shipped (regardless of whether or not they sell), *plus* our administrative expenses, out of the $2.40 we collect on copies sold.

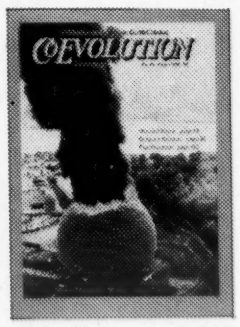
Newsstand sales often cost us money. But they're a service to new readers and a way of promoting the magazine. And if people who buy the *Whole Earth Review* on the newsstands become new subscribers, then the trade-off works.

A quick comment about the role advertising plays in how a magazine operates. Magazines that carry adver-

Issue 33 (Spring 1982): Art Kleiner and Stephanie Mills take on alternating editorship of *CQ*; SB changes his title to "publisher." Most of the major decisions about the magazine still belong to SB, but now other editors will begin to develop major voices in the direction of the magazine. Pat Califia's essay "Feminism and Sadomasochism" appears; it will spark more protest than "Rec Room" did. On the following page, *CQ* prints letters defending "Rec Room." *CQ* begins a wave of major budget cuts under the direction of financial advisor Paul Hawken. Included, for the first time in the magazine's history, is the selling of *CQ's* subscriber list. An anticipated wave of subscriber protest does not emerge. In "Gossip," SB reports that the campaign for metrication, fought against repeatedly in *CQ's* pages, has lost both in England and in the U.S. "Ronald Reagan, in his only known uncontested budget cut, is [dismantling] the U.S. Metric Board," he writes.

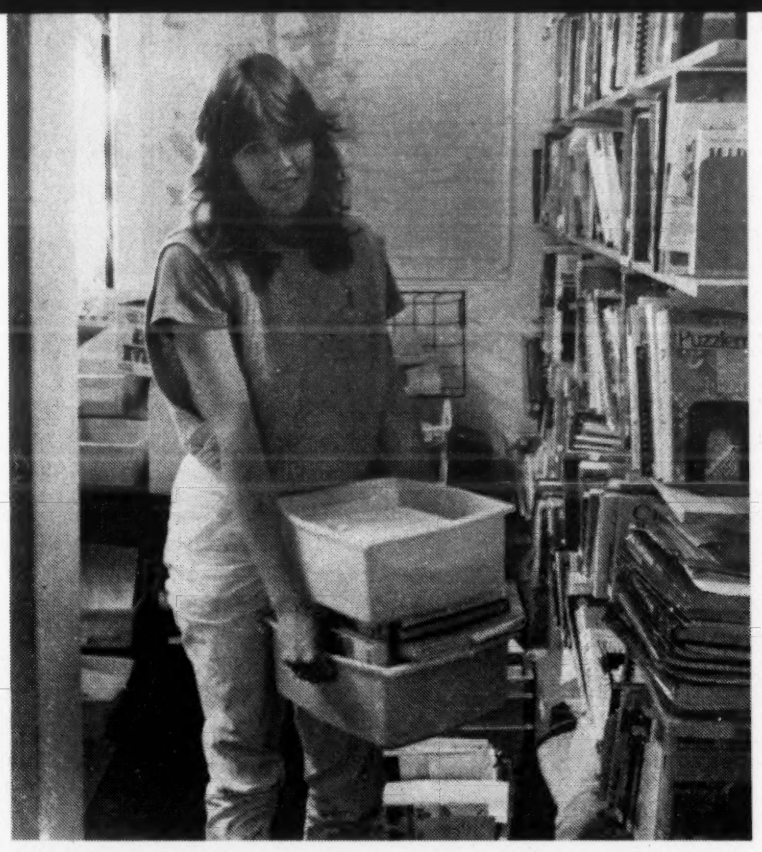
Issue 34 (Summer 1982): A cover story by Michael Phillips, "White America is Predominantly a Viking Culture," will prompt a series of reader rebuttals in future issues. By the time they're done, Vikings, Celts, Picts, Germanics, Slavs, IndoEuropeans, Greeks, and Romans will have been blamed and credited for the American Way of Life. SB unveils a new project, an adult school called Uncommon Courtesy, with classes on "compassionate skills" like home care, first aid, creative philanthropy, and preventing street violence. It is intended to nurture a "school of thought" called the Peripheral Intelligence Agency — potentially a group of hand-picked people with the mission to "1. Do good. 2. Try stuff. 3. Follow through." Reader John Benecki suggests "Unclassifieds," the first advertisements to ever appear in *CQ*: available to subscribers only, no display ads, prepaid, 30 cents a word. They will begin to appear in the following issue.





Issue 35 (Fall 1982): Three articles in this issue will later become books: Lewis Hyde's "The Gift Must Always Move," about the healthful practice among Indians of passing on gifts; Tom Parker's collection of "Rules of Thumb"; and Ken Weaver's compendium of Lone Star State raunchiness, "Texas Crude." The San Francisco *Chronicle* begins a weekly column edited from *CQ* material by SB and Joe Kane, called "The Chronicle Whole Earth Catalog." Robert Fuller and associates unveil the Mo Tzu Project, for amateur peace-making between disparate countries and peoples. Ongoing reports about Mo Tzu will appear henceforth in the magazine. SB proposes two editions of *CQ*: "Lite" for people offended by sexually explicit material, and "Bold" with full content. "I don't want to publish in fear of readers," he writes. "I do want there to be a magazine which can publish, potentially, anything. If that's to be truncated, I want it to be at least in part the choice and responsibility of the reader."

Issue 36 (Winter 1982): A guest-edited section by Conn Nugent, "When Things Go Wrong," about failure and misfortune. Partly because of the flood of letters about the Bold/Lite idea (mostly protesting, some supporting), *CQ* opens its first regular letters column, called "Backscatter." SB writes, "The volume and forcefulness and ambiguity of the letters on the two-issue issue tells me to proceed full tilt, not hang back, till we find out what's at the bottom of that whirlpool."



Books, grouped by page, are ferried around in dishwashing tubs while they are "accessed." Cindy Craig takes time out from distribution work to lend a hand during the overflow brought on by the *Essential Catalog* research.

tising charge advertisers based on how many people they reach — what their circulation is. And they have to guarantee that number (it's called guaranteeing rate base) or they could have to pay an advertiser back.

As a result, magazines are often more concerned with the number of subscribers they have than how they get them, or — and here's the interesting part — how much it *costs* to get them. In many cases magazines "buy" subscribers just to guarantee their advertising rate base. Two of the biggest suppliers of subscribers are Publishers Clearing House and American Family Publishers. When you subscribe through one of these companies, the publisher of the magazine sees very little of the money. Usually the magazine is offered at a cut-rate subscription price ($14 intead of $20, for example). Out of that $14, the publisher might receive $2. That amount doesn't even cover the costs of fulfilling your subscription. But it *does* bring in another name to help them guarantee their advertising rate base. And for magazines that carry substantial advertising, paying $12 to "buy" a subscriber is not that unusual.

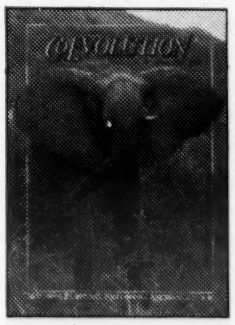
—Cindy Craig
Distribution

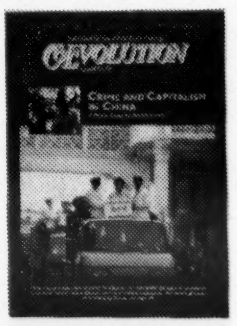
Issue 37 (Spring 1983): This issue is concerned with agricultural diversity and includes articles on deforestation and on an agricultural patron saint, Kokopelli. The first Bold section appears, with "More Texas Crude" and a two-page short story by a San Francisco poet named Pheno Barbidol. Anonymous author Szanto, a strategic planner for a large multinational corporation, begins a regular column called "Real Intelligence," in which he writes, "The Europeans view the U.S./U.S.S.R. conflict as the competitive decadence of two empires, with the only real uncertainty being which one will decline faster." In "Gossip," SB reports, "So far 190 people have requested *CQ* Lite versus 1900 people requesting *CQ* Bold — 10 percent. A much larger number haven't indicated which they want, and they get Bold. We won't know for a year if it'll pay off [in extra subscriptions], but it certainly isn't breaking us, and it's interesting to try."

Issue 38 (Summer 1983): Stephanie Mills resigns; cartoonist/editor Jay Kinney takes her place. An article by Robert Gnaizda foreshadows the "simple tax" proposals of the following year. The last *CQ* Bold section appears, a two-page article on Japanese "Love Hotels" by Michael Phillips; thereafter, no raunchy material shows up that's good enough to merit a special section. SB announces two new Whole Earth publications: a *Software Catalog,* to be published by Doubleday in Fall 1984; and a quarterly *Software Review,* to begin publication in Fall 1983 — "two publications evaluating the best personal computer software, hardware, suppliers, magazines, books, accessories, services, and promising directions to watch for . . ." A $1.3 million advance from Doubleday provides initial funding for the project. Editors of the new publication are hired from a competitive computer-writing job market at substantially larger salaries than the normal *CQ* staff (except Art Kleiner, who takes a large pay boost to join the software publications half-time instead of working as a freelancer). Thus ends the equal-pay-for-all-staffers salary policy that had held constant since 1976. The software publications and *CQ* share production facilities and staff, who move to the new software offices across the street from "Harvey's Lunches."

Issue 39 (Fall 1983): Jay Kinney edits a special section on reconciling politics and religion, including Gary Snyder's essay "Good, Wild, Sacred." In "Gossip," SB writes: "*The Whole Earth Catalog* and *CoEvolution Quarterly* are godchildren in part of Buckminster Fuller, who died a few weeks ago, followed a day later by his wife Anne. A few days after that another friend, the 300-pound "neo-Stoic" Herman Kahn died untimely at 63 . . . Fuller and Kahn started conversations that I expect to keep having with them the rest of my life."

Issue 40 (Winter 1983): *CQ* runs articles on the political, financial, and sexual abuses of two prominent counterculture religious leaders. The first is an investigative probe into the affairs of Swami Muktananda of the Siddha Meditation Movement. The second involves a former member of Point's own board: Zentatsu Baker Roshi of the San Francisco Zen Center, who will eventually be asked to resign by the Zen Center community. The change affects many Zen Center businesses, including the Whole Earth Household Store, which is sold to a Bay Area retail chain originally inspired by the *Whole Earth Catalog,* a chain called the Whole Earth Access Company. Two months before the Zen Center article appears, Stewart Brand and Patty Phelan are married at the Zen Center's Green Gulch Farm. *CQ* proofreader Hank Roberts signs on to do *Software Review* work as well. James Donnelly, who will shortly become *CQ's* most consistently eccentrically zany cartoonist, joins the staff as a typesetter.





Issue 41 (Spring 1984): The financial needs of the *Whole Earth Software*

Your Mailing Label: a short course

To help you keep on top of your subscription, here's a brief explanation of the codes found on the Whole Earth mailing label:

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023863  WE    JUN86      C  GR3
DUNLAP DUMMY                HDF
27 GATE 5 RD                        **
SAUSALITO, CA      94965            **
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Beginning in the upper-left corner, the first six numbers identify your subscription in our computer master file. Whenever you write to us about your sub — delivery problem, address change, renewal, etc. — please cite this number. It will allow us to find your record, no matter which address we have for you, or how badly we have garbled your name. Send your complaints and queries to us at 27 Gate Five Road, Sausalito, CA 94965.

Next, "WE" indicates that you are a Whole Earth subscriber (our subscription fulfillment house handles other magazines in addition to ours). The date following "WE" is the month and year of your last issue. It is actually the "on-sale" date, or the first month of each quarter's issue:

Spring = March = MAR; Summer = June = JUN;
Fall = September = SEP; Winter = December = DEC.

Since we mail each new issue to subscribers several weeks before the on-sale date, you should have received your copy before you see the new issue on newsstands.

Finally, the cryptic codes that sometimes appear on the right-hand side of the label are special instructions to our mailer and to the post office concerning bundling and delivery.

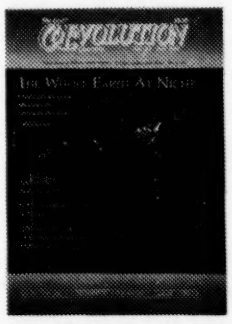
—David Burnor
Subscriptions

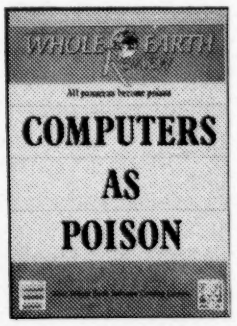
Recent WER mailing list renters:

Cousteau Society, Co-op America, American Civil Liberties Union, Edible Landscaping, Byte Magazine, People for Open Space, Workers Trust, Greenpeace USA, Marin Community College Public Events, Henry George School of Social Science, Californians Against Toxic Chemical Hazards, Progressive Magazine, Personal Computing, Harrowsmith Magazine, Ember.

Review bring budget planning to the rest of Whole Earth. Uncommon Courtesy is suspended "until Point is fat enough to do interesting charity again." The *CQ* products are discontinued because they drain more money than they bring in; SB remarks that products manager Debbie Hopkins "diligently assisted the very analysis that ended her job." Product fulfillment is given to the Whole Earth Access Company. The *CQ* library (excess review copies and research books accumulated over the years) is sold with sorrow. Meanwhile, the first issue of the *Whole Earth Software Review* appears — 132 pocket-book-sized pages, full-color, no advertising — to mixed critical reception. A subsequent issue is better, but gathers far fewer subscribers than expected. After the second issue, editor Richard Dalton resigns.

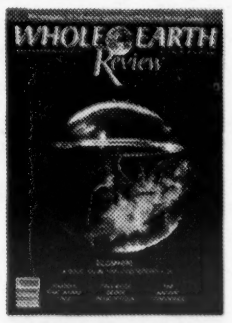
Issue 42 (Summer 1984): Art Kleiner leaves *CQ* to edit the *Whole Earth Software Review.* Contributor Kevin Kelly is hired from Athens, Georgia, to replace him. An article ("Nicaragua's Other War") by Bernard Nietschmann, on the battles between the Sandinista government and Nicaragua's Miskito Indians, will incite so much controversy that *CQ* will ultimately send Will Baker to Nicaragua to sort out the situation. The *Whole Earth Catalog* newspaper column begins to be syndicated nationally. The wedding of longtime *CQ* staffers Don Ryan (maps, photographs, paste-up) and Susan Erkel (proofreading, behind-the-scenes organization, Unclassifieds) is reported in "Gossip." Two other longtime employees — production liaison Jonathan Evelegh and librarian Ben Campbell, the unofficial conscience and all-around caretaker of the *CQ* office — leave the staff.





Issue 43 (Fall 1984): the last *CoEvolution Quarterly.* Says the cover: "Next issue is *Whole Earth Review*: livelier snake, new skin." Writes SB in "Gossip:" "The Point Foundation Board of Directors, doing its job, said [the *Software Review*] was pissing away what's left of the million-buck advance we got from Doubleday for the *Whole Earth Software Catalog.* . . . Gloom. Financial officer Paul Hawken brooded for a couple of weeks and then made the kind of suggestion we retain him for. 'Don't kill the *Software Review.* Blend the best of it into *CoEvolution*. Find a new title if need be. Use the money saved to make the new magazine be even better, and promote it properly.' " Meanwhile, the *Whole Earth Software Catalog* appears to much critical fanfare but in a depressed and glutted market for computer books. It sells tolerably well, but not nearly enough to begin paying royalties.

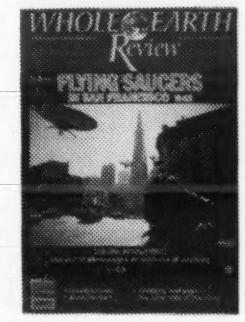
Issue 44 (January 1985): The first issue of the *Whole Earth Review* is bimonthly, 104 pages long, coedited by Art Kleiner and Kevin Kelly. It includes a 54-page section called "Computers as Poison." Writes SB in the section's introduction, "For the last couple of years computers, especially personal computers, have been touted as the bearer of salvation . . . and we bought it. And significant salvation occurred. Now that we've been saved, it's not too early to inquire about the real price." As if in contrast to this section, the last 22 pages of the issue are titled "Whole Earth Software Catalog Version 1.1" — all material that would have been in the *Software Review* had it continued. Many *Software Review* staffers move to the *Whole Earth Review.* They include Matthew McClure (who typeset the original *Whole Earth Catalogs* back in the '60s, then lived on Steven Gaskin's farm for 15 years, then returned to Whole Earth); Barbara Robertson, editor of the *Software Catalog;* Ted Schultz, who moved immediately into the *Whole Earth Review* copy editing slot; Lyn Gray, Cindy Craig and Clifford Figallo, who will take on varied office jobs for the combined magazine; and James Stockford. Along with the new name, there's a new subtitle — "Tools and Ideas for the Computer Age" — and a new publishing schedule, bimonthly. Because of the fewer pages and in fear of an avalanche of computer ads, "unclassifieds" are dropped. Reader mail on the merger is mostly virulently opposed. SB defends it in "Backscatter" on grounds that without the *Software Catalog* project, *CQ* could not have survived financially.



Issue 45 (March 1985): Includes a special

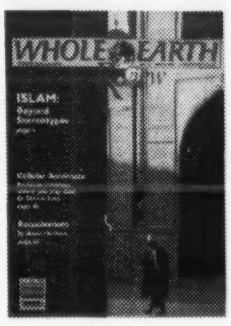
section on "Toxic Environmentalists." While preparing this issue, Whole Earth hosts the first "hacker's conference," a weekend-long event where 140 computer pioneers discuss such concepts as whether information should be free. The conference is based on a computer history called *Hackers* by regular Whole Earth contributor Steven Levy. In "Gossip," editor Kevin Kelly reports that "Office manager Andrea Sharp repeated her performance of four years ago by delivering her baby at home and reporting in to work the next week, sir. Two-week-old second daughter Sophie and Andrea share an office, like an earlier co-op with first daughter Sarah." He also notes the passing of Ethylwyn Steese, a 71-year-old houseboat resident who had regularly visited Whole Earth volleyball games as an audience, to "chide, cheer, insult, and lend an air of gaiety equal to a crowd of a thousand." Full-scale planning begins on a regional computer network, the "Whole Earth 'Lectronic Link (WELL)," co-owned by Whole Earth and Network Technologies (NETI) in Ann Arbor, Michigan.

Issue 46 (May 1985): The Hacker's Conference transcripts appear here, as does Will Baker's brilliant Central American summation, "Izum in Rinkydinkaragua." Cartoonist Larry Gonick begins a four-issue cartoon history of the United States. Bernard Kamoroff begins regularly reviewing books about small business. To house them, the *Review* opens a new section called "Small Business" and renames the back-of-the-book financial-report section "Gate Five Road" after Whole Earth's address. Art Kleiner resigns as full-time staffer and edits a best-of-*CoEvolution* book, *News That Stayed News,* to be published by North Point Press a year later. Several other computer-oriented staffers stick around just long enough to revise a second edition of the *Whole Earth Software Catalog.* WELL director Matthew McClure leaves the first message on the system in April: "Welcome to the Whole Earth 'Lectronic Link."



Issue 47 (July 1985): "Flying Saucers in San Francisco" screams the headline. The cover article, on digital retouching ("the end of photography as evidence of anything"), is a joint project between Kevin Kelly, SB, and Jay Kinney; it becomes the *WER* article most widely reprinted. To save money, Whole Earth moves out of its computer offices and into new, smaller quarters next door to its 27 Gate Five Road location. "Gossip" shows a photograph of Dick Fugett at the door of his new office — a beached 35-foot boat. This issue prints excerpts from Anne Herbert's forthcoming book, *Random Kindness and Senseless Acts of Beauty.*

Issue 48 (Fall 1985): After this issue is completed, SB departs on a year-long sabbatical, one he has planned for nearly a year. "I'm going back to the woods," he writes, "see if hair grows back along my spine and my teeth grow out in their old curl." His itinerary will include a season in East Africa, then a season teaching at Massachusetts Institute of Technology. Meanwhile, the advance from the *Whole Earth Software Catalog* runs out completely, and Whole Earth faces severe financial crisis. Staffers take a furlough or work without pay during the month of August, and the inside back cover carries a plea: "For the first time, we are asking for contributions in order not to close down." To save money, the magazine returns to quarterly publication: 144 pages. Computers begin decreasing in emphasis. "Unclassifieds" are reinstated. This issue is also noteworthy for Jan Brunvand's "Urban Legends in the Making" and articles on three health hazards: radiation from computers, herpes, and AIDS.



Issue 49 (Winter 1985): Jay Kinney edits a 38-page section called "Islam: Beyond Stereotypes." "What is it about this major world religion," he writes, "that motivates such fervent enthusiasm among some adherents? . . . Most other media are primed to present Islam as a Problem; we were curious about Islam as a Solution." Another article, "Why We Left the Farm," is an interview with eight ex-residents of the long-lived commune, The Farm, in Summertown, Tennessee. Two of the ex-residents, Matthew McClure and Clifford Figallo, are Whole Earth staffers. Joe Kane leaves to join an expedition navigating the full length of the Amazon by kayak, and to write a book about it. Ken Conner replaces him as copy editor. The second edition of the *Whole Earth Software Catalog* appears, with apparently better sales than the first edition but much less fanfare. The old uniform payroll scale is re-instituted. Everyone, including SB (when he's in), gets $10/hour.

Issue 50 (Spring 1986): Puff, puff: work begins on yet another *Whole Earth Catalog,* this one called the *Essential Whole Earth Catalog* (edited by J. Baldwin, managed by Jeanne Carstenson), to be published by Doubleday in the Fall. While teaching at MIT, SB signs with Viking to author a book about new Information Age technology and how it will affect the world. The issue includes a special section on "wireless" communication, overseen by Robert Horvitz. Both Tom Parker and Jan Brunvand continue the Whole Earth tradition of participatory articles. Compiled from items that readers passed on to them, "Rules of Thumb" and "Urban Legends" solicit more suggestions. For the first time in three years, the financial statement in "Gossip" shows a profit. ■

Back Issues/Further Issues

The quickest way to order back issues of this magazine is not from us but from Whole Earth Access (see address at right). ***CoEvolution Quarterly*** issues 14-43 are $3.50 each, postage paid, or $10 for four. Each ***WER*** back issue is $3 for issues 44 — 47 and $4.50 for 48 on, postage paid.

Subscriptions to ***Whole Earth Review*** are $18 for one year (4 issues) and $33 for two years (8 issues). Foreign rates are $22 for one year and $41 for two years. Send your order with payment to: ***Whole Earth Review***, P.O. Box 15187, Santa Ana, CA 92705.

"Or Whole Earth Access"

That phrase under access information in the ***Whole Earth Review*** means you can mail order the item from the Whole Earth Access store. *Do not send orders for books to* ***Whole Earth Review***. Send orders to:

Whole Earth Access
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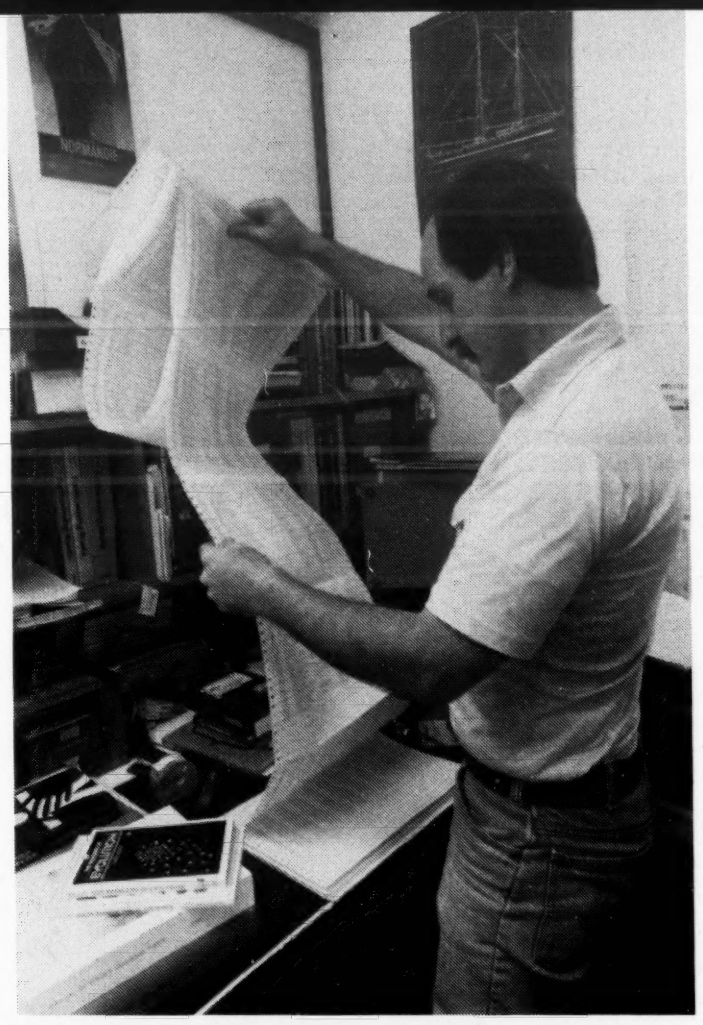

One of David Burnor's chores is keeping the subscriber list in order so people who renew late will still get the issues they want. The magazine's mailing labels are printed by our fulfillment house in San Diego and mailed to Whole Earth, where David inspects them. He also tends our list of supporting subscribers, acknowledged on this page with our gratitude.

Thank You!

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All contributions are tax-deductible because we're a nonprofit foundation.

Point/Whole Earth Consolidated Report January - March 1986

Income	
Subscriptions & Renewals	$ 88,526
Back Issues	876
Mailing List	7,193
Software Catalog Sales	4,144
Direct Distribution	14,144
National Newsstand	18,116
Syndicated Column	10,510
NETI/WELL	0
EWEC Production Advance	10,000
Contributions	13,163
Interest	2,329
CompuServe	523
Unclassifieds	1,240
Miscellaneous	3,555
Total Income	**174,319**

Expenses	
Salaries:	
Editorial	$ 15,088
Production	17,258
Circulation	5,579
Office	6,555
Research	10,380
Payroll Taxes/Benefits	3,037
Writers/Contributors	12,866
Supplies/Research	6,641
Magazine Printing	33,047
Subscription Promotion and Fulfillment	17,229
Direct Distribution	905
National Newsstand	3,429
Mailing List Fulfillment	761
Software Catalog Fulfillment	6,980
Syndicated Column	5,752
Equipment Rent/Maintenance	2,231
Telephone/Networks	5,209
Postage	3,913
Auto/Travel	295
Promotion/Publicity	- 135
Building Rent/Maintenance Utilities	10,950
Legal/Professional	1,229
Interest/Bank Charges	1,615
Miscellaneous Operating Expenses	1,969
Profit/Loss	**1,536**
Total Expenses	**172,783**

The WELL, Inc.

Income	
Subscription Sales	$ 28,814
Other	351
Total Income	**29,165**
Expenses	
Salaries & Fees	$ 17,975
General/Administrative	2,532
Maintenance	480
Office	4,133
Computer Expenses	15,693
Sales Expenses	2,645
Interest/Bank Charges	670
Total Expenses	**44,128**
Profit/Loss	**-14,963**

Whole Earth's finances are tracked with a Compaq Plus (IBM clone) microcomputer stuffed with recommendable Champion III software ($595), a fully endowed accounting package written in dbase III. It does payroll, the general ledger, and churns out reports. It does everything except file, which Clifford Figallo, the bookkeeper, has to do in humanoid fashion.

Truth in Labeling: the Financial Report Deciphered

Our seemingly prosperous financial report in last issue and our apparently healthy report this time may have confused some of you who remember last summer's pleas for contributions.

First of all, the tail-end payment for last year's *Software Catalog* ($30,000) and the first advance payments for the *Essential Whole Earth Catalog* ($51,000) overemphasized the plus side of last issue's report. Then came autumn, which is a perennial boom time for most businesses (and we are no exception). Most subscriptions get renewed during this period, and many gift subs are bought then. We got fat.

Slimming down the expense side of that report was the skeleton crew (and skeleton payroll) we ran for most of August and September. We incurred minimum expenses during those months of relative hibernation and recovery.

This issue's report reflects a more stable period of operation, but still includes a very strong January in subscription sales and renewals, and a production advance of $10,000 toward the *Catalog*. The total advance of $61,000 must last us through the production of the *Catalog* — until August — and as work accelerates, we are depleting that advance at a rate of over $10,000 a month.

Subscription revenue has dropped off considerably since January (somewhat expectedly), and that reduction may be starkly evident in the next issue's financial report unless we (and you) can produce a turnaround in renewals and new subscribers.

We think we have an improved magazine now, and we hope to put out a successful new *Catalog*, but Whole Earth ain't out of the woods yet.

The WELL, now incorporated on its own, is closing in on the break-even point with over 1,300 subscribers, and has raised its bargain rates to a still-low $3/hour (plus $8/month). It, too, still needs more subscribers to run in the black and to invest in the hardware and software needed to handle a larger subscriber base.

—Cliff Figallo
Bookkeeper

Mailing Services:
American Press, Columbia, MO; Subscription Fulfillment, Santa Ana, CA.
Mailing List Brokers:
Pacific Lists, Mill Valley, CA; Triplex Direct Marketing Corporation, San Rafael, CA.
Stats and Halftones:
Marinstat, Mill Valley, CA.
Printing:
Progressive Graphics, Oregon, IL (film); American Press, Columbia, MO.

UNCLASSIFIEDS

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- **Deadline** is June 16 for the Fall issue; September 15 for the Winter issue. Sorry, we will not take ads over the phone. Ads received after deadline will be held for the following issue.
- **We print ads in the order received.** "UNCLASSIFIEDS" means "no categories."
- **Mail ad and payment (made out to *Whole Earth Review*) to:** Susan Erkel Ryan, WER UNCLASSIFIEDS, 27 Gate Five Road, Sausalito, CA 94965.

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CQ BACK ISSUE WANTED: #6, Summer 1975. Want to buy (preferably) or borrow. Frank Malczewski, Box 3488, Littleton, CO 80161.

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LOOKING FOR MR. GOOD JOB! Erudite seeking position/partnership with same. Experience includes mgmt., bkpg., WordStar, etc. Currently working as Accounting Assistant in WWII vintage atmosphere. HELP! Seeking responsible position/partnership in information related business. Please contact Aimee, Box 8, 1405 Oak Grove Avenue, Burlingame, CA 94010.

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ANNE HERBERT of the Whole Earth Review said, "THE SUN tries to print the truth. Not the news or the latest, but the truth, Mr. Truth, the Queen of All Our Dreams. And it does." The poet Robert Bly said, "In this age of decrepit and impersonal magazines, THE SUN seems to me personal and alive." The spiritual teacher Ram Dass said, THE SUN grounds me when I get too spacey and helps me to fly when the ground gets too real. Who can ask for a better friend than that?" Since 1974, THE SUN has sorted through the chaff of "New Age" thinking to get to the heart and soul of humanity. Each month, in essays, interviews, humor, fiction, photographs and poetry, THE SUN looks at the passions that move us and the fears that weigh us down. People write in THE SUN of their struggle to understand their own lives, often baring themselves with remarkable intimacy. THE SUN asks a lot of its readers: self-honesty, thoughtfulness, the willingness to live with questions instead of answers. To subscribe for six months, send $15 to THE SUN, Dept. WER, 412 West Rosemary Street, Chapel Hill, N.C. 27514. And, for a copy of the just-published "A Bell Ringing in the Empty Sky: The Best of the Sun, Volume 1," an anthology of the finest writing from the magazine's first ten years — including Robert Bly, Reshad Feild, Thaddeus Golas, Ron Jones, Tuli Kupferberg, Ram Dass, Patricia Sun and other less known but equally compelling voices — send $12.95 plus $1.50 for postage and handling, or a total of $14.45, to the same address.

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WHOLE EARTH REVIEW has begun a library fund at the suggestion and contribution of Milo Jarvis. This fund will provide libraries with one-year gift subscriptions to WER, giving WER much-needed exposure. If you would like to contribute to this fund, you can send your contributions to WER Library Fund, 27 Gate Five Road, Sausalito, CA 94965.

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THE BIRTH GAZETTE is "a must for those who want to safeguard birthing in America," says Gena Corea. Benjamin Spock and Ashley Montagu agree. Year's subscription: $20 to The Birth Gazette; 42, The Farm; Summertown, TN 38483.

PERMACULTURE IN FRANCE. Bilingual publications and workshops. Inf.: Las Encantadas, 11300 Bouriege, France.

News That Stayed News

TEN YEARS OF CoEVOLUTION QUARTERLY

Art Kleiner:
CoEvolution Quarterly published a lot of material that will endure as "news that stayed news," to quote Ezra Pound's definition of literature. Hence this book — a collection of what we think is ***CoEvolution's*** *most lasting work.*

Kevin Kelly:
The Best of CQ, *as the staff calls the book, nails down permanence in a creature that has had very little of that — a restless magazine with unplanned interests, shaped by guest and rotating editors, printed on yellowing, crumbling newsprint.*

Given a chance to hold still, the magazine becomes a book that reads wonderfully, still overturning preconceptions of both new and old readers.

To keep "the news that stays news" readable in years hence, this book is crafted to stay around for a while. Distinctly in contrast to the ephemeral materials used in the magazine, it is printed on crisp, white, acid-free paper — all 337 pages of it — then sewn into a lasting and quite handsome cloth-cover tome. Standard practice for North Point Press, the publisher. North Point prices the book at $35, a reflection of the cost of this excellence. By agreement with North Point, we are selling the book to our readers by mail for $20. Some paperbacks go for that these days.

Stewart Brand:
CoEvolution Quarterly *was founded to see what would happen if an editor were totally unleashed. I would print anything that kept me turning its pages. I figured I had the requisite skills of an editor — I was a writer too lazy to write, a reader still curious about how the world might really work, and easily bored. I could say no. I could pick up the phone.*

It took me a long time to catch on it was not me and my impeccable taste that was working, it was the formula: editor unleashed.

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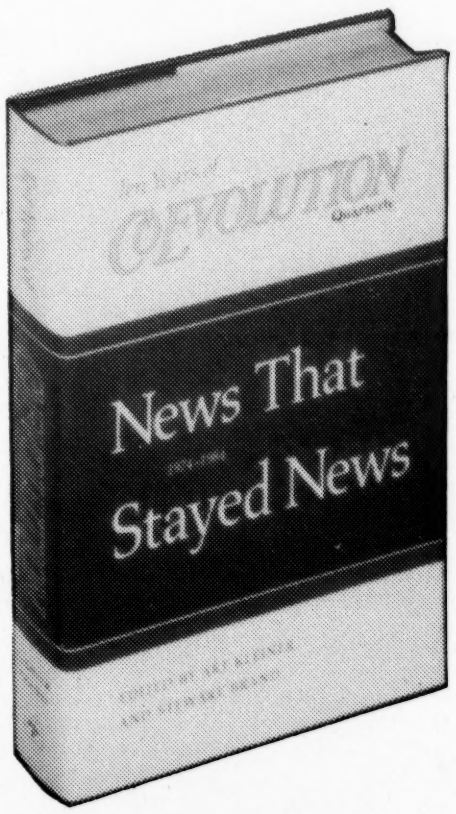

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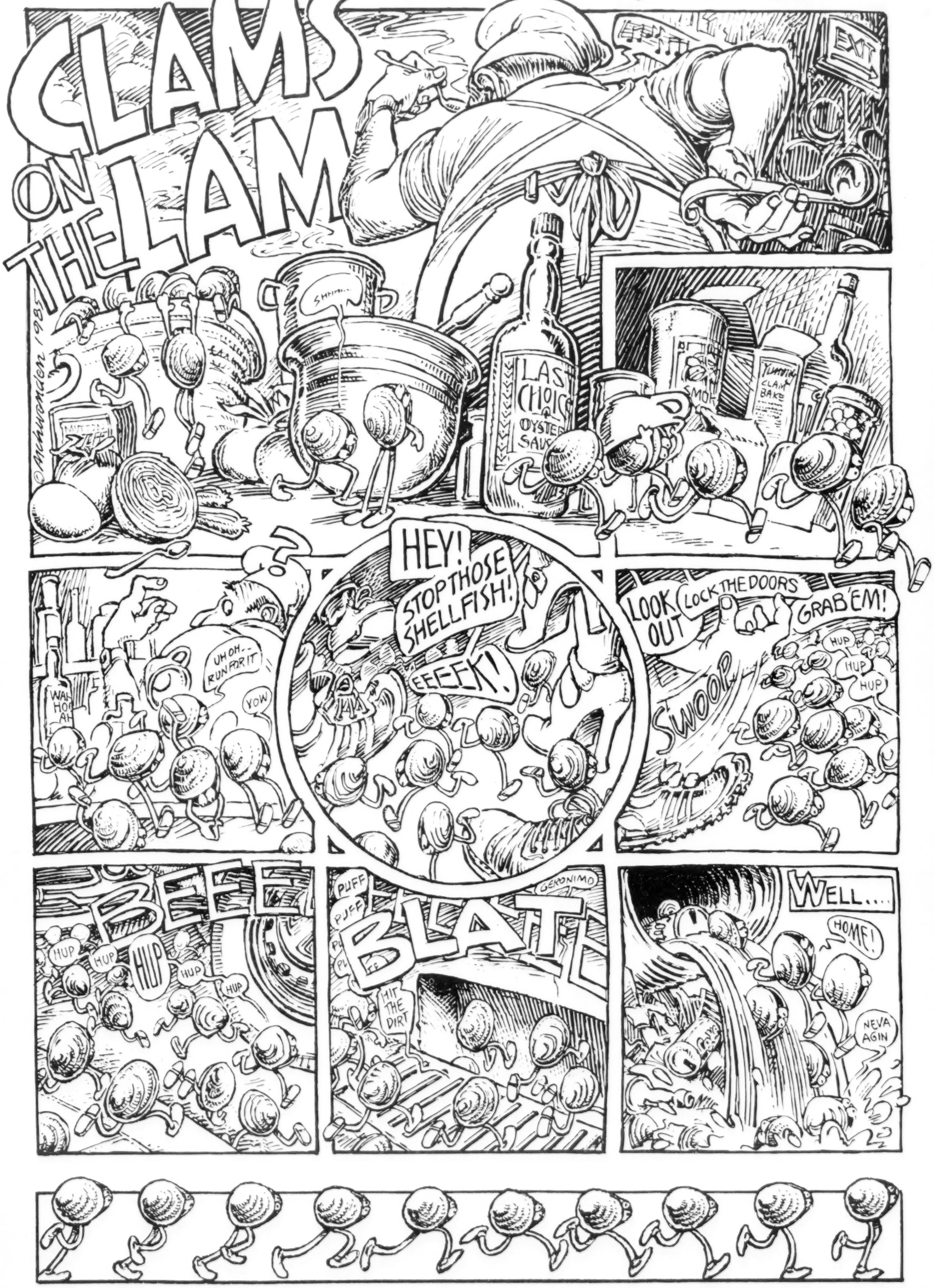

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